CURRICULUM VITAE FOR
CWRU SCHOOL OF MEDICINE

PERSONAL INFORMATION

Name: Crawford, Dana Colleen

EDUCATION
School: Vanderbilt University, Nashville, TN
Degree: Bachelor of Science (Molecular Biology)
Dates: 1991-1995

School: Emory University, Atlanta, GA
Degree: Doctor of Philosophy (Genetics and Molecular Biology)
Dates: 1995-2000

POST-GRADUATE TRAINING
Institution: Centers for Disease Control and Prevention, Atlanta, GA
Position, Epidemic Intelligence Service Officer, National Center on Birth Defects and Developmental Disabilities
Dates: July 2000-July 2002

Institution: University of Washington, Seattle, WA
Position: Post-doctoral fellow with Dr. Deborah Nickerson, Department of Genome Sciences,
Dates: July 2002- January 2006

PH.D. THESIS
Title: Factors involved in fragile X CGG repeat instability and their ultimate impact on world populations
Ph.D. Thesis Committee: Drs. Stephanie L. Sherman (advisor), Judy Fridovich Keil, Douglas Wallace, and Stephen T. Warren.

CONTACT INFORMATION
Office Address: Wolstein Research Building, 2103 Cornell Road, Suite 2527, Cleveland, Ohio 44106-7295
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PROFESSIONAL/ACADEMIC APPOINTMENTS

Position/Rank: Professor (with tenure)
Institution/Department: Department of Population and Quantitative Health Sciences
Case Western Reserve University
Dates: July 1, 2020 – present

Position/Rank: Associate Director for Population and Diversity Research
Institution/Department: Cleveland Institute for Computational Biology
(formerly Institute for Computational Biology)
Case Western Reserve University
Dates: January 13, 2015 - present

Position/Rank: Associate Professor (secondary appointment)
Institution/Department: Department of Genetics and Genome Sciences
Case Western Reserve University
Dates: June 2016- present

Position/Rank: Associate Professor (with tenure)
Institution/Department: Department of Population and Quantitative Health Sciences
(formerly Epidemiology and Biostatistics)
Case Western Reserve University
Dates: January 13, 2015 – June 30, 2020

Position/Rank: Visiting Associate Professor
Institution/Department: Department of Epidemiology and Biostatistics and Institute for Computational Biology
Case Western Reserve University
Dates: July 8, 2014 – January 12, 2015

Position/Rank: Associate Professor (with tenure)
Institution/Department: Department of Molecular Physiology and Biophysics
Vanderbilt University
Dates: July 2012-July 2014

Position/Rank: Assistant Director
Institution/Department: Center for Human Genetics Research
Vanderbilt University
Dates: July 2013-March 2014

Position/Rank: Assistant Professor (tenure-track)
Institution/Department: Division of Human Genomics
Department of Molecular Physiology and Biophysics
Vanderbilt University
Dates: September 18, 2006-2012

Position/Rank: Investigator
Institution/Department: Center for Human Genetics Research
Vanderbilt University
Dates: September 18, 2006 – 2012

Position/Rank: Acting Assistant Professor
Institution/Department: Department of Genome Sciences

University of Washington
Dates: February 1 – September 1, 2006

HONORS AND AWARDS

Collierville High School Valedictorian	1991
Vanderbilt University's Chancellor's Scholar	1991-1995
Vanderbilt Undergraduate Howard Hughes Research Fellowship	1993
Vanderbilt University, graduated Cum Laude	1995
C.W. Cotterman Award (post-doctoral paper deemed to have made outstanding scientific contributions to the field of human genetics published in the previous year of the *American Journal of Human Genetics*) *American Journal of Human Genetics* 76(2):197 (2005) PMC1196360	2004
NCMHD/NIH Health Disparities Research Scholar	2005-2011
Rippel Scholars Award for New Investigators (finalist)	2007
Tomorrow's PI, Genome Technology	2007
Vanderbilt Clinical and Translational Research Scholar	2008-2009
FASEB MARC Travel Award for Genetics and Genomics of Infectious Disease (GGID) meeting in Singapore	2009
Fellow, Keystone Symposia on Molecular and Cellular Biology	2009-2010
Pacific Symposium on Biocomputing Travel Award	2013
Kavli Frontiers of Science fellow	2012-2014
Society for Advancement of Chicanos and Native Americans in Science (SACNAS) Distinguished Research Mentor Award https://www.youtube.com/watch?v=alstHidCyhY	2014
Case Western Reserve University School of Medicine Faculty Diversity Award	2017
Annual Biomedical Research Conference for Minority Students (ABRCMS) Judges Travel Award	2017
Case Western Reserve University Shared Training to Advance Integrity in Research (STAIR) Mentor Fellows Program, senior mentor fellow with junior mentee fellow Dr. Farren Briggs	2019-2020

CONTINUING EDUCATION AND TRAINING

Epidemiology in Action: Intermediate Methods Course. Philip S. Brachman, Coordinator. The Rollins School of Public Health, Emory University and the Centers for Disease Control and Prevention. Atlanta, Georgia, Feb. 26-March 2, 2001.

Genetic Analysis of Complex Human Disease. Marcy C. Speer, Margaret A. Pericak-Vance, Jonathan L. Haines, Co-organizers. Duke University. Durham, North Carolina, May 6-9, 2001.

What's Next? A Leadership and Professional Development Program for Tenured Women Faculty, Flora Stone Mather Center for Women, Case Western Reserve University. Cleveland, OH, September 2015 – January 2016.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Society of Human Genetics (ASHG)	1997-present
American Public Health Association	2010
Human Genome Organisation (HUGO)	2012
American Association for the Advancement of Science (AAAS)	2013-present
American Heart Association (AHA)	2013-present
Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)	2014-present
American Medical Informatics Association (AMIA)	2016-present

PROFESSIONAL SERVICES

ADVISORY GROUPS

Population Architecture using Genomics and Epidemiology (PAGE) Inflammation and Autoimmunity Working Group chair and Lipids Project Group chair	2008-2013
Northwest Institute of Genetic Medicine External Advisory Board	2009-2010
Electronic Medical Records & Genomics (eMERGE) Genomics Working Group co-chair	2009-2014
Illumina Genetics Advisory Panel	2011
Pharmacogenomics Research Network (PGRN) Statistical Analysis Resource (P-STAR) expert consultant	2010-2015

Indonesian-American Kavli Frontiers of Science Symposium Organizer 2013-2014

Southern Community Cohort Study (SCCS) Publications Committee 2013-2014

National Institutes of Health (NIH) Workshops

- NHGRI Future Directions for the eMERGE Network (Invited participant) Jan 2014
- NIH All of Us Workshop. Informatics, Methodologies, Ethical/ Legal, and Statistical Research and Cardio-Respiratory and Blood (Invited participant) Mar 2018
- NHGRI Strategic Planning Meeting. From Genome to Phenotype: Genomic Variation Identification, Association, and Function in Human Health and Disease
  Invited panelist, Topic 3: Predicting and Characterizing Functional Consequences of Genome Variation, Including Beyond Single Variant/ Gene Jan 2019

Association for Computing Machinery (ACM) 5th ACM Conference on Bioinformatics, Computational Biology and Health Informatics (ACM BCB) Program Committee 2014

Pacific Symposium on Biocomputing (PSB) Session/Workshop Co-Organizer

- Detecting and Characterizing Pleiotropy: New Methods for Uncovering the Connection Between the Complexity of Genomic Architecture and Multiple Phenotypes. Co-chairs: Anna L. Tyler, Dana C. Crawford, Sarah A. Pendergrass 2014
- Precision Medicine: From Genotypes and Molecular Phenotypes Towards Improved Health and Therapies. Co-chairs: Bruce Aronow, Steven E. Brenner, Dana C. Crawford, Joshua C. Denny, Sean D. Mooney, Alexander A. Morgan 2017
- Precision Medicine: From Diplotypes to Disparities Towards Improved Health and Therapies. Co-chairs: Bruce Aronow, Steven E. Brenner, Dana C. Crawford, Joshua C. Denny, Alexander A. Morgan 2018
- Integrating Community-level Data Resources for Precision Medicine Research. Co-chairs: Dana C. Crawford and William S. Bush 2018
- Precision Medicine: Improving Health Through High-Resolution Analysis of Personal Data. Co-chairs: Steven E. Brenner, Martha Bulyk, Dana C. Crawford, Jill Mesirov, Alexander A. Morgan, Predrag Radivojac 2019
- Precision Medicine: Addressing the Challenges of Sharing, Analysis, and Privacy at Scale. Co-chairs: Steven E. Brenner, Martha Bulyk, Dana C. Crawford, Alexander A. Morgan, Predrag Radivojac, Nicholas Tatonetti 2020
- Computational Challenges and Artifical Intelligence in Precision Medicine. Co-chairs: Olga Afanasiev, Joanne Berghout, Steven

Brenner, Martha L. Bulyk, Dana Crawford, Jonathan H. Chen, Roxana Daneshjou, Łukasz Kidziński (scheduled) 2021

American Society of Human Genetics (ASHG)
Moderator or co-moderator
- Session 31: Neurogenetics, San Diego, CA 2007
- Session 29: Genomics II, Philadelphia, PA 2008
- Session 61: Missing Heritability, Interactions, & Sequencing, San Francisco, CA 2012
- Session 104. Advancing Drug Discovery by Genetic Analysis in Large Cohorts, Orlando, FL 2017

Abstract reviewer
- Topic 5: Complex Traits and Polygenic Disorders June 2012
- Topic 2: Complex Traits and Polygenic Disorders June 2019

Annual DNA Day Essay Contest
- Judge, Round One March 2015
- Judge, Round Two March 2016
- Judge, Round One March 2017
- Judge, Round One March 2018
- Judge, Round Three March 2019
- Judge, Round Three March 2020

Diversity Breakfast
- Panelist 2018

Board of Directors
- Elected member 2019-2021
- Professional Conduct Working Group, member 2019-present
- Diversity and Inclusion Task Force, chair 2020-present

Invited session speaker
- What about the phenotype? Integrating Electronic Health Records to Drive Discovery in Precision Health 2019

Annual Biomedical Research Conference for Minority Students (ABRCMS)
- Poster judge 2015-present
- Travel award judge 2018-present
- Ambassador, Computational and Systems Biology 2018-present
- Invited session speaker
  - Precision Medicine: Where genomics meets big data biomedical informatics. Phoenix Convention Center, Phoenix, AZ 2017
  - Genomic research enabled by electronic health records. Anaheim Convention Center, Anaheim, CA. 2019

Society for the Advancement of Chicanos/Hispanics and Native Americans in Science (SACNAS)
- National conference scientific session organizer and speaker
  - Genomic Discovery, Collaboration, and Translation Using

Electronic Health Records. Speakers: Drs. Dana Crawford (CWRU), Sarah Pendergrass (Geisinger), and Janina Jeff (Mount Sinai). Gaylord National Resort and Convention Center, Washington, DC (Speaker and organizer). 2015

- The ABCs of Diversity in Genomic Research: Ascertainment, Bioinformatics, and Computation. Speakers: Drs. Farren Briggs (CWRU), Janina Jeff (Illumina), William Bush (CWRU), and Sarah Pendergrass (Geisinger). Long Beach Convention Center, Long Beach, CA (Organizer). 2016
- The Importance of Diversity in Precision Medicine Research. Speakers: Drs. William Bush (CWRU), Janina Jeff (Illumina), and Dana Crawford (CWRU). Henry B. González Convention Center, San Antonio, TX (Speaker and organizer). 2018

Undergraduate research presentations reviewer 2019

Keystone Symposia Health Disparities Workshops Working Group 2016-2019

Million Veterans Program (MVP) Statistical Genetics Work Group 2016-present

AMIA Informatics Summit (formerly Joint Summits on Translational Science)
Summit on Translational Bioinformatics (TBI), Scientific Program Committee 2016-2017
Student Paper Competition Judge 2017
Reviewer 2017, 2019

External Advisory Committee member, Orofacial Pain: Prospective Evaluation and Risk Assessment (OPPERA) project funded by NIH/NIDCR 2016-2017

Translational Bioinformatics Conference, Long Beach, CA
Manuscript reviewer 2017

Informatics Domain Task Force (iDTF) member, Clinical & Translational Science Awards (CTSA) 2017-present

GpGx Computational Methods for Target Identification and Validation Scientific Input Engagement, Merck Research Labs Dec 2017

Association for Clinical and Translational Science
Translational Science Abstract Reviewer 2019

Artificial Intelligence in Oncology: Advancements and Policy, Session IV – Policy & Ethical Considerations for AI, panelist Oct 24, 2019

American Association for the Advancement of Science
STEMM Equity Achievment (SEA) Change Departmental Awards

Framework Drafting Group	2020

NIH STUDY SECTIONS/GRANT REVIEW COMMITTEES

Center for Scientific Review Special Emphasis Panel 2008/01 ZRG1 HOP-D (03) M	Nov 28, 2007
Center for Scientific Review Special Emphasis Panel ZRG1 HOP-D (02)	July 24, 2008
Center for Scientific Review, Behavioral Genetics and Epidemiology Study (BGES) Section	Feb 5-6, 2009
Challenge Grants Panels (RFA-OD-09-003): 2009/10 ZRG1 PSE-J (58) R (Panel 1), 2009/10 ZRG1 CVRS-B (58) R (Panel 19), 2009/10 ZRG1 PSE-C (58) R	Jun 12, 2009
Grand Opportunity Grants Panels (RFA-OD-09-004): NIA ZRG1 CVRS B (58) and NCI ZCA1 RTRB-2 (O9)	July 29, 2009 Aug 5-6, 2009
National Institute of Neurological Disorders and Stroke, Udall Centers Review: 2011/08 ZNS1 SRB-E (51)	Jul 14-15, 2011
National Heart, Lung, and Blood Institute Special Emphasis Panel, RFA-HL-13-007: Targeted Analyses of Jackson Heart Study Data (R01)	Aug 15, 2012
National Heart Lung and Blood Institute Re-sequencing and Genotyping (RSnG) Program	Oct 2, 2008 Dec 29, 2008 Dec 16, 2009 Aug 27, 2010 Apr 25, 2012 Sept 12, 2012 Sept 13, 2013 Dec 4, 2014 Mar 17, 2015 June 19, 2015 Sept 14, 2015 Dec 2, 2015
National Heart, Lung, and Blood Institute Special Emphasis Panel, 2015/05 HLBP 1	Feb 2, 2015 Sept 10, 2015
National Human Genomic Research Institute (NHGRI) Genome Research Review Committee (GNOM-G): study section member	2010-2016
National Human Genome Research Institute (NHGRI) Special Emphasis	

Panel ZHG1 HGR-M (J1) U41 SEP	Nov 8, 2016
Center for Scientific Review Special Emphasis Panel 2017/01 ZRG1 BDCN-N (90) Epilepsy and Alcohol Dependence	Dec 20, 2016
Center for Scientific Review Special Emphasis Panel 2017/05 ZDK1 GRB-N (M2) 1 Inflammatory Bowel Disease Genetics Consortium	March 7, 2017
Infectious Diseases, Reproductive Health, Asthma and Pulmonary Conditions Member Conflicts 2017/05 ZRG1 PSE-U (02)M	April 7, 2017
National Heart, Lung, and Blood Institute (NHLBI) TOPMED: Omics, Phenotypes of Heart, Lung and Blood Disorders (X01) 2017/10 ZHL1 CSR-G(01)1	May 12, 2017
National Institute of Neurological Disorders and Stroke (NINDS) ZNS1 SRB-A(16) Special Emphasis Panel (SEP) Project Grant Proposals (P01)	Mar 12, 2018
National Human Genome Research Institute (NHGRI), 2018/05 ZHG1 HGR-M (M3) 1 – DAP (Diversity Action Plan)	Mar 20, 2018
National Human Genome Research Institute (NHGRI), 2018/08 ZHG1 HGR-P (O1) 1 – DAP (Diversity Action Plan)	July 10, 2018
National Human Genome Research Institute (NHGRI), 2019/05 GNOM-G 1	Mar 7, 2019
Center for Scientific Review, Conflict Special Emphasis Panel, ZRG1 BST-R (02)	June 20, 2019
Center for Scientific Review, Special Emphasis Panel, 2020/05 KNOD	Feb 5-7, 2020
National Human Genome Research Institute (NHGRI), 2020/10 GNOM-G 2	June 4, 2020
Center for Inherited Disease Research (CIDR) Access Committee	July 2020-present

OTHER REVIEWS

NHANES: Genetic Component Technical Review for the National Center for Health Statistics, Centers for Disease Control and Prevention	Feb, Aug, and October 2009; June 2017
Ontario Research Fund	Dec 14, 2009

Wellcome Trust	Jan 14, 2011
Vanderbilt Physician Scientist Development (VPSD) Program and Vanderbilt Clinical & Translational Research Scholars (VCTRS) Program Review Committee	Apr 30, 2012 Feb 28, 2013
Centers for Disease Control and Prevention Field Review DD12-006 Coordinating Center for Research and Training to Promote the Health of People with Developmental and Other Disabilities	Jun 19, 2014
Austrian Science Fund	Mar 24, 2017
Joint Biomedical Laboratory Research and Development and Clinical Science Research and Development Services, Scientific Merit Review Board, Subcommittee for Special Emphasis on Million Veteran Program SPLM	Jul 11-12, 2017 Jan 11-12, 2018
Swiss National Science Foundation/Innosuisse, Bridge Discovery review	July 2020

EDITORIAL DUTIES

Academic Editor, *PLoS One*	2012-present
Editor (Genetics section), *Pediatric Research*	2012-2016
Guest Associate Editor, *PLoS Genetics*	2016-2017, 2019
Specialty Chief Editor (Applied Genetic Epidemiology), *Frontiers in Genetics*	2017-present

AD HOC JOURNAL REVIEWER

Acta Cardiologica
American Heart Journal
American Journal of Epidemiology
American Journal of Human Genetics
American Journal of Hypertension
American Journal of Medical Genetics
American Journal of Obstetrics and Gynecology
American Medical Informatics Association Joint Summits on Translational Science
Annals of Human Genetics
BioData Mining
Bioinformatics and Biology Insights
BMC Evolutionary Biology

BMC Infectious Diseases
BMC Medical Genetics
BMC Sports Science, Medicine and Rehabilitation
Cancer Epidemiology
Circulation: Cardiovascular Research
Circulation Research
Clinical and Experimental Medicine
Computers in Biology and Medicine
Coronary Artery Disease
Diabetes
EBioMedicine
Epidemiology and Infection
Ethnicity & Disease
European Journal of Human Genetics
European Journal of Medical Genetics
Expert Review of Precision Medicine and Drug Development
Frontiers in Neurology (Neurogenetics)
Gene
Genetic Epidemiology
Genetics
Genetics in Medicine
Genome Medicine
Genomic Medicine
Genome Research
Heart
Hepatology
Human Biology
Human Molecular Genetics
Human Mutation
Influenza and Other Respiratory Viruses
International Journal of Medical Informatics
Investigative Ophthalmology & Visual Science
Journal of the American College of Cardiology
Journal of American Medical Association
Journal of the American Medical Informatics Association
Journal of Biomedical Informatics
Journal of Cellular and Molecular Medicine
Journal of Human Genetics
Journal of Pediatric Endocrinology and Metabolism
Mayo Clinic Proceedings
Molecular Biology and Evolution
Molecular Genetics and Metabolism
Nature Genetics
Neurogenetics
Neurosurgery
New England Journal of Medicine

Pacific Symposium on Biocomputing
Pediatric and Blood Cancer
PLoS Computational Biology
PLoS Genetics
PLoS One
Physiological Genomics
Science
Scientific Reports
The Pharmacogenomics Journal
Trends in Genetics
Tropical Medicine

COMMITTEE SERVICE

VANDERBILT UNIVERSITY

Center for Human Genetics Research Annual Genetics Symposium
Vanderbilt University, Nashville TN
"Making Sense of the Senses"
Speakers: Drs. Toni Pollin (University of Maryland), Stephen Wooding (UT Southwestern Medical Center), Jane Gitschier (University of California San Francisco), Jennifer Blackford (Vanderbilt University), David Calkins (Vanderbilt University), and Samuel Crish (Vanderbilt University)
Organizing Committee Chair 2008

Vanderbilt University Program in Human Genetics Oversight Committee 2007-2014

Vanderbilt Institute for Clinical and Translational Research (VICTR) Studio expert and panel member, ad-hoc 2008-2013

Vanderbilt University Medical Scientist Training Program Faculty Advisory Committee 2011-2014

Vanderbilt University BioVU Operations and Oversight Board Jul 2011-2014

Vanderbilt University BioVU Review Committee
Member Jun 2011-2014
Vice-chair Aug 2013-2014

Vanderbilt University Center for Human Genetics Faculty Search Committee 2012

Vanderbilt University Molecular Physiology and Biophysics Curriculum Review Committee 2012

Vanderbilt University Endowed Genomics Chair Faculty Search Committee 2013

Vanderbilt University Prize Scholar Award Committee 2013

CASE WESTERN RESERVE UNIVERSITY

Case Western Reserve University Committee on Appointments, Promotion, and Tenure (CAPT), Department of Population and Quantitative Health Sciences committee member 2015-2019

Case Western Reserve University, Department of Epidemiology and Biostatistics, Population Genomics Search Committee, Chair 2015

Case Western Reserve University, Department of Epidemiology and Biostatistics, Grievance Committee 2015

Case Western Reserve University, Department of Epidemiology and Biostatistics, EPBI Ad hoc Seminar Committee, Chair 2015

Case Western Reserve University, Department of Epidemiology and Biostatistics, Health Disparities Search Committee, member 2015-2016

Case Western Reserve University, Cleveland Institute for Computational Biology Annual Symposium (North Coast Conference on Precision Medicine), Cleveland, OH, Organizing Committee Chair 2015-present

Case Western Reserve University, School of Medicine, Committee on Appointments, Promotion, & Tenure
- Member 2016-2019
- Co-chair 2018-2019

Departmental Search Committee Officer for Inclusion, Diversity and Equal Opportunity
- Biomedical Data Science Search Committee, member
- Cancer Epidemiology Search Committee, member
- Director of the MPH Program Search Committee, member
- Spatial Epidemiology Search Committee, ex officio
- Biostatistics Search Committee, ex officio
- MPH Non-Tenure Track Faculty Position Search Committee, member
- Computational Genetic Epidemiology Instructor Search Committee, member 2016-2019

Case Western Reserve University, Cleveland Institute for Computational Biology and Cleveland Clinic Lerner Research Institute, Quantitative Health Sciences, Bioinformatics Search Committee, member 2017-2018

MetroHealth System Medicine Chair Search Committee, member 2018

Case Western Research University, Nutrition Department Search Committee, member 2019

Postbaccalaureate Research Education Program (PREP)
Steering Committee, member 2019-2020
Associate Director 2020-present

Case Western Reserve University, Department of Population and Quantitative Health Sciences, Epidemiology and Biostatistics PhD Program, Exam Committee, member 2019-present

MetroHealth System Biorepository Committee 2019

TEACHING ACTIVITIES

INVITED PRESENTATIONS (LOCAL; NASHVILLE, TN)

1. *VLDLR*, carotid artery disease, and lipids. Center for Human Genetics Research, Genetic Interest Group, Vanderbilt University, Nashville, TN, October 19, 2006.

2. DNA resources for rare outcomes. An example in *Neisseria meningitidis*. Center for Human Genetics Research retreat, Vanderbilt University, Nashville, TN, June 13, 2007.

3. *VKORC1* and its association with bone mineral density in the general population. Department of Molecular Physiology and Biophysics, Vanderbilt University, May 8, 2008.

4. *VKORC1* and its association with bone mineral density in the general population. Vanderbilt Epidemiology Center, Nashville, TN, May 27, 2008.

5. The genetics of quantitative traits related to cardiovascular disease. Vascular Biology retreat, Vanderbilt University, Nashville, TN, October 31, 2008.

6. Of Biobanks and Cohorts: Using Large DNA Collections for Discovery and Characterization in the Era of Genome-Wide Association Studies. Vanderbilt Epidemiology Center, Nashville, TN, May 12, 2009.

7. Characterization of lipid-associated SNPs in the National Health and Nutrition Examination Surveys (NHANES). Vanderbilt Epidemiology Center, Nashville, TN, January 12, 2010.

8. Race Research and You: Genomic Tools for Health Disparities Research. Meharry Medical College, Nashville, TN, March 25, 2010.

9. Epidemiologic Architecture for Genes Linked to Environment. Department of Molecular Physiology and Biophysics, External Review, Nashville, TN, September 7, 2010.

10. The Genetics of Common Quantitative Traits in Diverse Populations. 11th Annual Vanderbilt

Genetics Symposium (Beyond Disease Dichotomy. Quantitative traits and intermediate phenotypes), Nashville, TN, October 13, 2010.

11. Moving DNA from Bench to Bedside at Vanderbilt. Canby Robinson Society Board of Directors Meeting, Vanderbilt University, Nashville, TN, April 19, 2011.

12. On the Generalization of GWAS-identified variants in Diverse Populations. Illumina User Group Meeting, Nashville, TN, September 15, 2011.

13. Genomics and race/ethnicity. Vanderbilt Meharry CFAR Scientific Retreat, Nashville, TN, February 8, 2013.

14. The Center for Human Genetics Research (CHGR) and the Population Architecture using Genomics and Epidemiology (PAGE) Study: An Overview. Vanderbilt Epidemiology Center, Nashville, TN, February 21, 2013.

15. Genomic Predictors of Ages at Reproductive Milestones in African American Women. Meharry Medical College, 11th Annual Research Symposium, Nashville, TN, April 10, 2014.

INVITED PRESENTATIONS (LOCAL; CLEVELAND, OH)

1. EHRs and Large-scale Comparative Effectiveness Research. 2014 Biomedical & Health Informatics Workshop, Case Western Reserve University, Cleveland, OH, September 16, 2014.

2. All In! Cleveland and Precision Medicine. Genetics and Genome Sciences, Case Western Reserve University, September 30, 2015.

3. Precision Medicine Initiative: Challenges for Vision Research, Ophthalmology Grand Rounds, University Hospitals, March 23, 2016.

4. Crawford's in Cleveland. Graduate School and Beyond. Postbaccalaureate Research Education Program (PREP), Case Western Reserve University, February 15, 2017.

5. MetroHealth-Institute for Computational Biology Pilot study (MIPs): A Burgeoning Biobank in Cleveland, Genomic Medicine, Lerner Research Institute, Cleveland Clinic, June 12, 2017.

6. Academic Job Search Series (Panelist). Facilitated by Dr. Kristine-Ann Buela (post-doctoral fellow in Pathology) and organized by Rachel Begley, Director of the Professional Development Center, School of Graduate Studies, Case Western Reserve University, December 8, 2017.

7. Faculty ToolKit Series: Session on Promotion for Faculty in the Tenure Track (Panelist). Facilitated and organized by Nicole Deming, Assistant Dean for Faculty Affairs and Human Resources, Case Western Reserve University, February 20, 2018.

8. Crawford's in Cleveland. Graduate School and Beyond. Postbaccalaureate Research Education Program (PREP), Case Western Reserve University, February 21, 2018.

9. Different Ways Data Are Endangered (Panelist). Endangered Data Week, Kelvin Smith Library, Case Western Reserve University, February 28, 2018.

10. The Importance of an Online Presence in Science. Developing a Professional Online Presence, Women in Sciences and Humanities Earning Doctorates, Case Western Reserve University, November 5, 2018.

11. Cleveland's Gone Computational. Postbaccalaureate Research Education Program (PREP), Case Western Reserve University, February 26, 2019.

12. Faculty ToolKit Series: Session on Senior Level Promotions for Faculty in the Tenure Track (Panelist). Facilitated and organized by Nicole Deming, Assistant Dean for Faculty Affairs and Human Resources, Case Western Reserve University, March 19, 2019.

13. Precision Medicine Research and Issues Related to Return of Results and Other Stuff. Heart, Lung, and Blood (HLB) Summer Research Program, Case Western Reserve University, July 9, 2020.

CONSORTIA PRESENTATIONS

1. EAGLE Overview. PAGE Steering Committee Meeting, Bethesda, MD, October 6, 2008.

2. EAGLE: Allele Frequencies and Associations. PAGE Steering Committee Meeting, Bethesda, MD, October 6, 2008.

3. EAGLE: Associations and Context Dependencies. PAGE Steering Committee Meeting, Bethesda, MD, October 6, 2008.

4. Genome-wide association study identified novel genomic regions associated with drug-induced Long QT Syndrome. Fifth Statistical Analysis Workshop of the Pharmacogenomics Research Network (PGRN), Rochester, MN, April 15, 2009.

5. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, April 27, 2009.

6. EAGLE Update. PAGE Steering Committee Meeting, Seattle, WA, September 24, 2009.

7. Inflammation Workgroup Update. PAGE Steering Committee Meeting, Seattle, WA, September 24, 2009.

8. Preliminary Lipids Analysis in EAGLE. PAGE Steering Committee Meeting and External Scientific Panel, Seattle, WA, September 24-25, 2009.

9. Preliminary Data from Vanderbilt Genome-Electronic Records (VGER) QRS Study. eMERGE Steering Committee Meeting, Bethesda, MD, November 19, 2009.

10. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, January 14, 2010.

11. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Bethesda, MD, January 14, 2010.

12. Vanderbilt Genome-Electronic Records (VGER) QRS Study. eMERGE Steering Committee Meeting, Bethesda, MD, April 12, 2010.

13. Genomics Workgroup: Next Steps in Genomics. eMERGE Steering Committee Meeting, Bethesda, MD, April 12, 2010.

14. EAGLE Update. PAGE Steering Committee Meeting, Nashville, TN, June 8, 2010.

15. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Nashville, TN, June 8, 2010.

16. Fine mapping in African American samples for QRS and T2D. eMERGE Steering Committee Meeting, Bethesda, MD, August 30, 2010.

17. Hypothyroidism. eMERGE Steering Committee Meeting and External Scientific Panel, Bethesda, MD, August 31, 2010.

18. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, October 19, 2010.

19. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting and External Scientific Panel, Bethesda, MD, October 19-20, 2010.

20. EAGLE Update. PAGE Steering Committee Meeting, Marina del Rey, CA, February 14, 2011.

21. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Marina del Rey, CA, February 14, 2011.

22. Network-wide Phenotype Update: Hypothyroidism. eMERGE Steering Committee Meeting, Bethesda, MD, April 25, 2011.

23. Fine mapping and admixture mapping associated with ECG traits and type II diabetes in African Americans. eMERGE Steering Committee Meeting, Bethesda, MD, April 26, 2011.

24. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, June 8, 2011.

25. Phase 1 Genomics Workgroup Highlights. eMERGE Steering Committee Meeting, Bethesda, MD, July 25, 2011.

26. Hypothyroidism/TSH: eMERGE Network-wide Projects eMERGE Steering Committee Meeting, Bethesda, MD, July 26, 2011.

27. Resistant Hypertension Update: eMERGE Network-wide Project. eMERGE Steering Committee Meeting, Bethesda, MD, July 26, 2011.

28. Genomics Workgroup eMERGE II Goals. eMERGE Steering Committee Meeting and External Scientific Panel, Rockville, MD, October 18, 2011.

29. Genetic risk scores and eMERGE. eMERGE Steering Committee Meeting, Bethesda, MD, February 9, 2012.

30. EAGLE Update. PAGE Steering Committee Meeting, Chapel Hill, NC, March 5, 2012.

31. PAGE-wide lipids analysis. PAGE Steering Committee Meeting, Chapel Hill, NC, March 6, 2012.

32. Genomics Workgroup Update. eMERGE Steering Committee Meeting, Minneapolis, MN, June 5, 2012.

33. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, June 19, 2012.

34. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Bethesda, MD, June 20, 2012.

35. PAGE Reproduction Project Group Update. PAGE Steering Committee Meeting, Bethesda, MD, June 20, 2012.

36. EAGLE Update. PAGE Steering Committee Meeting, Bethesda, MD, October 18, 2012.

37. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Bethesda, MD, October 19, 2012.

38. PAGE Lipids Project Group Update. PAGE Steering Committee Meeting, Seattle, WA, March 14, 2013.

39. EAGLE Summary. PAGE Steering Committee Meeting, Seattle, WA, March 15, 2013.

40. Resistant Hypertension Update. eMERGE Steering Committee Meeting, Philadelphia, PA, June 3, 2013.

41. Null Variants. eMERGE Steering Committee Meeting, Bethesda, MD, October 7, 2013.

42. Genome-based Biomarker Quantification Process for Susceptibility/Risk. Informatics Domain Task Force (iDTF) Spring Face-to-Face Meeting, Clinical and Translational Science

Awards (CTSA) Program, San Francisco, CA, March 16, 2018.

43. Engaging the Digitally Underserved in Clinical Research. Informatics Domain Task Force (iDTF) Spring Face-to-Face Meeting, Clinical and Translational Science Awards (CTSA) Program, San Francisco, CA, March 16, 2018.

INVITED PRESENTATIONS (NATIONAL AND INTERNATIONAL)

1. Cluster investigation of orofacial clefts in Dickson County, Tennessee, 1997-2000. Epidemic Intelligence Service Conference, Atlanta, GA, April 23-27, 2001.
Featured in "The Rewards, and the Roadblocks, of Medical Sleuthing" by Lawrence K. Altaman, MD, NYTimes.com on May 1, 2001

2. Human diversity: Impact on genetic testing and screening. Information Conference on the Human Genome Project: Challenges and Impact of Human Genome Research for the Minority Communities, Atlanta, GA, July 20-21, 2001.

3. Examining the factors involved in fragile X CGG repeat instability—multifaceted approach. Department of Genome Sciences (Dr. Deborah Nickerson), University of Washington, Seattle, WA, September 7, 2001.

4. Examining the factors involved in fragile X CGG repeat instability—multifaceted approach. Department of Pediatrics, Arkansas Center for Birth Defects Research and Prevention (Director: Dr. Charlotte Hobbs), University of Arkansas for Medical Sciences, Little Rock, AR, January 24, 2002.

5. Examining the factors involved in fragile X CGG repeat instability—multifaceted approach. Program in Human Genetics (Director: Dr. Jonathan Haines), Vanderbilt University, Nashville, TN, January 31, 2002.

6. Examining the factors involved in fragile X CGG repeat instability—multifaceted approach. Center for Statistical Genetics (Director: Dr. Michael Boehnke), Department of Biostatistics, University of Michigan, Ann Arbor, MI, February 20, 2002.

7. Applying from the PGA Resource - Haplotypes. BayGenomics Program for Genomic Applications, San Francisco, CA, April 27, 2004.

8. SeattleSNPs and Applications in Pharmacogenetics. Rosetta, Seattle, WA, July 22, 2005.

9. Assessing the impact of candidate gene variation on quantitative phenotypes. Division of Statistical Genomics (Head: Michael Province), Washington University, St. Louis, MO, December 15, 2005.

10. Assessing the impact of candidate gene variation on quantitative phenotypes. Center for Human Genetics Research (Director: Jonathan Haines), Vanderbilt University, Nashville, TN, February 9, 2006.

11. Assessing the impact of candidate gene variation on quantitative phenotypes. Center for the Study of Weight Regulation and Associated Disorders (Director: Roger Cone), Oregon Health and Science University, Portland, OR, February 22, 2006.

12. Assessing the impact of candidate gene variation on quantitative phenotypes. The McDermott Center for Human Growth and Development (Director: Helen Hobbs), Center for Human Genetics, UT Southwestern, Dallas, TX, March 13, 2006

13. Assessing the impact of candidate gene variation on quantitative phenotypes. Division of Endocrinology, Diabetes and Nutrition (Head: Alan Shuldiner), University of Maryland, Baltimore, MD, April 4, 2006.

14. Genetic association study designs for influenza vaccine clinical trials. Keynote speaker for the Clinical Immunization Safety Assessment (CISA) annual meeting. Centers for Disease Control and Prevention, Atlanta, GA, April 23-24, 2007.

15. Genomics and Vaccine Safety. Understanding the Genomic Basis of Vaccine Safety. Centers for Disease Control and Prevention, Atlanta, GA, January 30-31, 2008.

16. *APOA1/C3/A4/A5* gene cluster SNPs and their interaction with dietary intake are associated with triglyceride levels in the Third National Health and Nutrition Examination Survey. Keystone Symposia on Complex Traits: Biologic and Therapeutic Insights, Santa Fe, NM, February 29-March 5, 2008.

17. Designing Association Analyses. From SNPs to Haplotypes, the Importance of Leveraging Linkage Disequilibrium. American Society for Clinical Pharmacology and Therapeutics, Orlando, FL, April 5, 2008.

18. Genetic determinants of lipids among nonfasting children. Department of Medical Genetics (Chair: Dr. Philip Giampietro), Marshfield, WI, August 13, 2008.

19. Of Biobanks and Cohorts: Using Large DNA Collections for Discovery and Characterization in the Era of Genome-Wide Association Studies. HudsonAlpha, Huntsville, AL, March 11, 2009.

20. Genome-wide association study identified novel genomic regions associated with drug-induced long QT-syndrome. Pharmacogenetic Research Network (PGRN) Statistical Analysis Workshop V, Rochester, MN, April 15, 2009.

21. Using NHANES to Determine the Epidemiologic Architecture for Genes Linked to Environment. National Center for Health Statistics, Centers for Disease Control and Prevention, Hyattsville, MD, October 7, 2009.

22. Using NHANES to determine the Epidemiologic Architecture for Genes Linked to Environment (EAGLE). HudsonAlpha Spring Symposium, Huntsville, AL, March 30, 2010.

23. Population Architecture using Genomics and Epidemiology (PAGE) – from SNPs to GWAS and beyond. American Public Health Associaton, Denver, CO, November 6-10, 2010.

24. Using Biobanks Linked to Electronic Health Records to Move from Base Pairs to Bedside. Illumina Discovery Symposium, Montreal, Canada, October 11, 2011.

25. On the Generalization of GWAS-identified Variants in Diverse Populations from the Population Architecture using Genomics and Epidemiology (PAGE) Study. Human Genetics and Genomics Seminar Series, University of Miami, Miami, FL, November 15, 2011.

26. Using biobanks linked to electronic health records to move from base pairs to bedside. Inaugural Symposium, Penn State Hershey Institute for Personalized Medicine, Penn State Hershey University Conference Center, Hershey, PA, June 8, 2012.

27. Trans-ethnic comparisons for the role of genetics in diabetes: the PAGE Study. American Diabetes Association, Philadelphia, PA, June 9, 2012.

28. Genetic Association Studies in Diverse Populations. Departments of Epidemiology and Biostatistics (Chair: Jonathan Haines) and Genetics and Genomics Sciences (Chair: Anthony Wynshaw-Boris), Case Western Reserve University, Cleveland, OH, September 20, 2013.

29. Big Genetic Epidemiology. American College of Epidemiology. Louisville, KY, September 24, 2013.

30. Genetic Association Studies in Diverse Populations. Division of Human Genetics (Director: Ray Hershberger), The Ohio State University, Columbus, OH, October 28, 2013.

31. Genetic Association Studies in Diverse Populations. School of Biology (Director of the Center for Integrative Genomics: Greg Gibson), Georgia Tech University, Atlanta, GA, December 5, 2013.

32. Approaches to Gene-Nutrient Studies Based on Experiences from the Epidemiologic Architecture for Genes Linked to Environment (EAGLE) Study. 3rd International Vitamin Conference, Washington, DC, May 12-15, 2014.

33. Leveraging Epidemiologic and Clinical Collections for Genomic Studies of Complex Traits. Integrated Systems Biology Analytical Methods for Epidemiological Studies of Complex Traits, 2014 Mid-Atlantic Genetic Epidemiology and Statistics (MAGES) Conference, Philadelphia, PA, May 30, 2014.

34. Genome-wide Association Studies. Big Data Analysis and Translation in Disease Biology (Big Data and Disease), Jawaharlal Nehru University, New Delhi, India, January 19, 2015.

35. All In! Cleveland and Precision Medicine. Center for Systems Genomics, The Pennsylvania State University, August 26, 2015.

36. All In! Cleveland and Precision Medicine. Program in Personalized and Genomic Medicine, University of Maryland, November 18, 2015

37. Phenome-wide Association Studies. Understanding the Function of Human Genome Variation, Keystone Symposia, Uppsala, Sweden, June 1, 2016.

38. All In! Cleveland and Precision Medicine. Single Nucleotide Polymorphisms and Human Disease, Gordon Research Conference, Mount Holyoke, South Hampton, MA, June 16, 2016.

39. All In! Cleveland and Precision Medicine. Computational Challenges for Precision Medicine, MidAtlantic Bioinformatics Conference, Philadelphia, PA, October 26, 2016.

40. Diversity in Precision Medicine Research: An example in Cleveland. Keynote Speaker. Translational Bioinformatics Conference, Long Beach, CA, September 29-October 1, 2017.

41. Extracting Meaningful Clinical Outcomes from Large Biobanks. GpGx Computational Methods for Target Identification and Validation Scientific Input Engagement, Merck Research Labs, Boston, MA, December 12, 2017.

42. What You Need to Know about Precision Medicine Research. Precision Genomics Midwest, Cincinnati, OH, May 11, 2018.

43. Covering All the Bases: A Primer on Today's Sequencing Technologies and Their Applications in Precision Medicine Research. Total Exposure Health, Washington, DC, September 6-7, 2018.

44. Diversity as an Imperative in Precision Medicine. Personalizing CKD Care and Prevention: Lessons from Genomics of Chronic Disease, Kidney Week, American Society of Nephrology, San Diego, CA, October 23-28, 2018.

45. The Importance of Diversity in Big Genomic Data. Keynote speaker. Big Data and the Future of Research Symposia, Sigma Xi, San Francisco, CA, October 26-28, 2018.

46. Challenges in Precision Medicine Research: The Cleveland Experience. HudsonAlpha, Huntsville, AL, February 13, 2019.

47. Challenges in Precision Medicine Research: The Cleveland Experience. Department of Pharmacotherapy and Translational Research, University of Florida, Gainesville, FL, April 12, 2019.

48. Challenges in Precision Medicine Research: The Cleveland Experience. 3rd Personalized Medicine Conference, Puerto Vallarta, Mexico, May 30-June 2, 2019.

49. Precision Medicine Research and Issues Related to Return of Results. Center for Public

Health Genomics, University of Virginia, Charlottesville, VA, November 20, 2019.

50. Making Precision Medicine Mainstream with Health Data: Challenges to Acceleration, Research Participation and Diversity, Precision Medicine World Conference, Santa Clara, CA, January 21-24, 2020.

51. Electronic health records and computable phenotyping strategies. Precision Medicine meeting track, 27th International Molecular Medicine Tri-Conference, San Francisco, CA, March 2-4, 2020.

52. Medication-dependent computable phenotypes: mapping prescription records within the electronic health record across institutions. Big Drug Data: A Guide to Utilizing Electronic Health Records for Clinical Pharmacology Research, American Society for Clinical Pharmacology & Therapeutics, Houston, TX, March 18-21, 2020 (cancelled due to SARS-CoV-2/COVID-19).

53. Biobanks in diabetes and obesity research and treatment. Biobanks and Electronic Health Records in Diabetes Care and Research, American Diabetes Association, June 12-16, 2020.

TRAINEES/MENTEES

VANDERBILT UNIVERSITY

Past Medical Fellows

Daniel Johnson, MD (2010-2014) Fellow mentoring committee
Sara Van Driest, MD, PhD (2010-2014) Fellow mentoring committee
Quinn Wells, MD, PharmD, MSCI, MS (2014) Masters advisor in genetic epidemiology

Past Graduate Students

PhD Program in Human Genetics:

Dapo Akingbade (2007) Rotation student
Chelsea (Cupp) Sullivan, PhD (2009) Rotation student
Kirsten Diggins, PhD (2012) Rotation student
Haley Eidem, PhD (2013) Rotation student
Rachel (Hoffmann) Ashley, PhD (2013) Rotation student
Lindsay (Gordon) Sausville, PhD (2010) Rotation student
Gunnar Kwakye, PhD (2006) Rotation student
Carrie Shaffer, PhD (2007) Rotation student
Corinne Simonti, PhD (2013) Rotation student
Clare Spielman (2013) Rotation student
Krystal Tsosie, MPH (2012) Rotation student
Olivia Veatch, PhD, MS (2009) Rotation student
Amy Wotawa, MS, CG (ASCP), (2008) Rotation student

Victoria Youngblood, PhD (2011) Rotation student

Carrie (Buchanan) Moore, MD, MS, PhD (2011-2013) Masters committee member
Anna (Davis) Cummings, PhD, MS (2006-2012) Rotation student; Chair of thesis committee
Laura D'Aoust, MD, PhD (2010-2014) Rotation student; Chair of thesis committee
Todd Edwards, PhD, MS (2006-2008) Thesis committee
Jake Hall, PhD, MS (2010-2014) Rotation student; Masters committee member
Emily Holzinger, PhD, MS (2008-2013) Rotation student; Masters committee member
Nuri Kodaman, PhD, MS (2009-2014) Masters committee member
Mary Ellen Koran, MD, PhD (2012-2014) Thesis committee
Jude McElroy, MD, PhD (2010-2012) Chair of thesis committee
Sabrina Mitchell, PhD (2007-2010) Thesis committee
Kelli Ryckman, PhD, MS (2007-2008) Thesis committee
Rafal Sabota, MD, MS, PhD (2012-2015) Masters committee member; Chair of thesis committee
Stephen Turner, PhD, MS (2007-2011) Chair of thesis committee; Masters committee member
Marquitta White, PhD, MS (2009-2014) Rotation student; Thesis committee
Laura Wiley, PhD, MS (2013-2014) Chair of thesis committee
Rebecca (Zuvich) Essner, PhD, MS (2007-2009) Thesis committee

Logan Dumitrescu, PhD, MS (2006-2011) PhD thesis and Masters advisor, IDENTIFICATION AND CHARACTERIZATION OF GENETIC VARIANTS ASSOCIATED WITH LIPID AND LIPOPROTEIN LEVELS

- Awards
    - Supported by Training Program on Genetic Variation and Human Phenotype (T32 GM080178) as part of the Center for Human Genetics Research Human Genetics Training Program, 2007-2009
    - Summer Institute in Statistical Genetics Travel Award, Seattle, WA, June 11-29, 2007
    - Vanderbilt University Travel Grant Award, American Society of Human Genetics, Philadelphia, PA, November 11-15, 2008
    - Vanderbilt University Travel Grant Award, American Society of Human Genetics, Honolulu, HI, October 20-24, 2009
    - Teaching Fellowship Award, Vanderbilt University, 2009
    - Charles R. Park Student Travel Award, Human Genome Organisation Meeting, Montpellier, France, May 18-21, 2010
- Positions
    - Post-doctoral fellow, Vanderbilt University Medical Center (2011-2013)
    - Regulatory writing expert, Synchrogenix (2013-2016)
    - Neuroimaging Analyst, Vanderbilt Memory & Alzheimer's Center, Vanderbilt University Medical Center (2016-2018)
    - Research Assistant Professor, Vanderbilt Memory & Alzheimer's Center, Vanderbilt University Medical Center (2018-present)

Janina M. Jeff, PhD, MS (2007-2012) PhD thesis and Masters advisor, THE GENETICS OF QUANTITATIVE TRAITS ASSOCIATED WITH CARDIOVASCULAR DISEASE IN AFRICAN AMERICANS

- Awards
    - Supported by Training Program on Genetic Variation and Human Phenotype (T32 GM080178) as part of the Center for Human Genetics Research Human Genetics Training Program, 2008-2010
    - Summer Institute in Statistical Genetics Travel Award, Seattle, WA, June 16–July 2, 2008
    - Carl Storm Fellowship for Gordon Scientific Conferences, The Biology of Post-Transcriptional Gene Regulation, Salve Regina University, Newport, RI, July 18-23, 2010
    - FASEB MARC travel award, American Society of Human Genetics, Washington, DC, November 2-6, 2010
    - Vanderbilt University Travel Grant Award, African Society of Human Genetics, Cape Town, South Africa, March 6-9, 2011
    - Vanderbilt University Graduate School Dissertation Enhancement Grant, March 2011
    - Scientist in the Classroom Teaching Fellowship, Vanderbilt Center for Scientific Outreach, May 2011
    - FASEB MARC travel award, American Society of Human Genetics, Montreal, Canada, October 11-15, 2011
    - Dr. Levi Watkins Jr. Student Award for commitment to diversity, Vanderbilt School of Medicine, October 2011
    - National Graduate Student Symposium, St. Jude Children's Research Hospital, Memphis, TN, (one of the 45 invitees selected from 1,500 applications), March 20-24, 2012
- Positions
    - Post-doctoral fellow, Mount Sinai (2013-2015)
    - Global Bioinformatics Specialist, Illumina (2015-present)
    - In Those Genes podcast, founder (2018-present) and recipient of the American Society of Human Genetics Advocacy Award (2020)

Matt T. Oetjens, PhD, MS (2009-2014) PhD thesis and Masters advisor,
PHARMACOGENETIC DISCOVERY IN AN EMR-BIOREPOSITORY

- Awards
    - Supported by Training Program on Genetic Variation and Human Phenotype (T32 GM080178) as part of the Center for Human Genetics Research Human Genetics Training Program, 2010-2012
    - Vanderbilt University Travel Grant Award, European Society of Human Genetics, Amsterdam RAI, the Netherlands, May 28-31, 2011
- Positions
    - Post-doctoral fellow, Department of Human Genetics, University of Michigan (2014-2017)
    - Bioinformatics staff scientist, Autism & Developmental Medicine Institute, Geisinger Health System (2017-2019)
    - Assistant Professor, Geisinger Medical Center (2020-present)

Jennifer R. Malinowski, PhD, MS (2010-2014) PhD thesis and Masters advisor, WOMEN'S

HEALTH: GENETIC VARIATION IN COMPLEX TRAITS

- Awards
    - Vanderbilt University Travel Grant Award, American Society of Human Genetics, Montreal, Canada, October 11-15, 2011
    - Why We Can't Wait: Conference to Eliminate Health Disparities in Genomic Medicine, travel award, San Francisco, CA, May 29-31, 2013
    - Pacific Symposium on Biocomputing, NLM/NIH travel award, Big Island, HI, January 3-7, 2014
- Positions
    - Associate Research Scientist, Department of Surgery, Section of Endocrine Surgery, Yale University School of Medicine (2014-2015)
    - Associate Analyst, Genetic Test Evaluation Program, Hayes, Inc (2015-2016)
    - Medical Research Analyst, Genetics, Hayes, Inc (2016)
    - Freelance writer (2015-present) and President of Write InSciTe (2017-present)

Nicole A. Restrepo, PhD (2010-2015), MS (2016) PhD thesis and Masters advisor, INVESTIGATION OF THE GENETIC EPIDEMIOLOGY OF AGE-RELATED MACULAR DEGENERATION, PRIMARY OPEN-ANGLE GLAUCOMA, AND DIABETIC RETINOPATHY IN DIVERSE POPULATIONS

- Awards
    - FASEB MARC travel award, American Society for Human Genetics, San Francisco, CA, November 6-10, 2012
    - Why We Can't Wait: Conference to Eliminate Health Disparities in Genomic Medicine, travel award, San Francisco, CA, May 29-31, 2013
    - FASEB MARC travel award, American Society for Human Genetics, Boston, MA, October 22-26, 2013
    - Pacific Symposium on Biocomputing, NSF travel award, Big Island, HI, January 4-8, 2016
- Positions
    - Research Scientist, Case Western Reserve University (2015-2017)
    - Bioinformatics staff scientist, Geisinger Health System (2017-2018)
    - Statistical genetics consultant, Decibel Therapeutics (2019-2020)
    - Genomics scientist, Seven Bridges Genomics (2020-present)

Brittany M. Hollister, PhD (2012-2017), PhD thesis co-advisor, EXAMINING THE ROLE OF SOCIOECONOMIC STATUS ON BLOOD PRESSURE IN AFRICAN AMERICANS

- Awards
    - 2015 Outstanding Student Presentation in Anthropological Genetics, American Association of Anthropological Genetics
    - Pacific Symposium on Biocomputing, NLM/NIH travel award, Big Island, HI, January 3-7, 2017
- Positions
    - Post-doctoral fellow, National Human Genome Research Institute, National Institutes of Health (2017-2019)
    - Academic Program Specialist III, University of Florida Genetics Institute (2019-present)

Past Postdoctoral Students

Sarah A. Pendergrass, PhD, MS (2009-2011)

- Awards
  - Named one of Genome Technology's PIs of Tomorrow 2014
- Positions
  - Research Associate, Penn State University (2011-2015)
  - Assistant Professor, Geisinger Biomedical and Translational Informatics Program (2015-2019)
  - Scientific Manager, Genentech (2019-present)

Janina M. Jeff, PhD, MS (2012-2013)

- Awards
  - FASEB MARC travel award, American Society for Human Genetics, San Francisco, CA, November 6-10, 2012
  - Keystone Symposia Underrepresented Minority Scholarship, New Frontiers in Cardiovascular Genetics Beyond GWAS, Tahoe City, CA, January 13-18, 2013
- Positions
  - Post-doctoral fellow, Mount Sinai (2013-2015)
  - Global Bioinformatics Specialist, Illumina (2015-present)
  - In Those Genes podcast, founder (2018-present) and recipient of the American Society of Human Genetics Advocacy Award (2020)

Logan Dumitrescu, PhD, MS (2011-2013)

- Awards
  - Pacific Symposium on Biocomputing, NSF travel award, Big Island, HI, January 4-8, 2016
- Positions
  - Regulatory writing expert, Synchrogenix (2013-2016)
  - Neuroimaging Analyst, Vanderbilt Memory & Alzheimer's Center, Vanderbilt University Medical Center (2016-2018)
  - Research Assistant Professor, Vanderbilt Memory & Alzheimer's Center, Vanderbilt University Medical Center (2018-present)

Sabrina L. Mitchell, PhD (2010-2015)

- Awards
  - Pacific Symposium on Biocomputing, NLM/NIH travel award, Big Island, HI, January 3-7, 2014
- Positions
  - Post-doctoral fellow, Vanderbilt University Medical Center (2015-2017)
  - Staff Scientist, Division of Genetic Medicine, Vanderbilt University Medical Center (2017)
  - Staff Scientist, Department of Ophthalmology and Visual Sciences, Vanderbilt University Medical Center (2017-2018)
  - Staff Scientist, Division of Genetic Medicine, Vanderbilt University Medical

Center (2018-present)

Past Other Students/Mentees

Roberto Reyes, MS, University of Arizona undergraduate (2011) Minority Summer Research Program, Vanderbilt University Summer Science Academy

- Genetic architecture of triglyceride levels in children over the course of treatment for acute lymphoblastic leukemia (Oral presentation and FASEB MARC Program travel award). Molecular and Computational Biology session, Annual Biomedical Research Conference for Minority Students (ABRCMS), St. Louis, MO, November 9-12, 2011.

CASE WESTERN RESERVE UNIVERSITY

Current Graduate Students

Elina Misicka (2018-present) Epidemiology and Biostatistics PhD thesis committee chair
Jasmine Olvany (2019-present) Genetics and Genome Sciences PhD thesis committee member
Anna Miller (2019-present) Genetics and Genome Sciences PhD thesis committee chair
Shiying Liu (2020-present) Epidemiology and Biostatistics PhD mentor
Michael Osterman (2020-present) Epidemiology and Biostatistics PhD thesis committee chair

Xinyuan (Blair) Zhang (2019-present) Genomics and Computational Biology, University of Pennsylvania, thesis committee member

Current Postdoctoral Students

Current Other Students/Mentees

Katherine Dobbs, MD (2018-present) K23 Research Mentor for Case Western Reserve University School of Medicine Instructor, Pediatrics (1K23 AI132644-01A1 Epigenetic Reprogramming of Monocyte Functions during Acute Uncomplicated Malaria in Kenyan Children)

Caitrin W. McDonough, PhD (2018-present) K01 Research Mentor for University of Florida College of Pharmacy Research Assistant Professor, Pharmacotherapy and Translational Research (1K01 HL41690-01 Integrative data approaches for resistant hypertension identification and prediction)

Domenica Drouet, Case Western Reserve University medical school student (2020-present), Case Western Reserve University Heart, Lung, and Blood (HLB) Summer Research Program

Past Graduate Students

Elina Misicka (2018) Rotation student, Epidemiology and Biostatistics PhD program
Shiying Liu (2019) Rotation student, Epidemiology and Biostatistics PhD program

Mike Fang (2018) Ad hoc committee member, Epidemiology and Biostatistics PhD program
Abby Statler, PhD (2017-2018) Epidemiology and Biostatistics PhD thesis committee chair
Ruzica Conic, PhD (2017-2019) Clinical Research Scholars Program PhD thesis committee member
Andrea Waksmunski, PhD (2017-2020) Genetics and Genome Sciences PhD thesis committee chair
Lauren Cruz, MPH (2020) Rotation student, Epidemiology and Biostatitsics PhD program

Lauren Cruz, MPH (2020) MPH Capstone Committee Chair GENETIC RISK FOR ALZHEIMER'S DISEASE IN AN AMISH COHORT

- Current Position: Graduate student, CWRU Epidemiology and Biostatistics PhD program (2020-present)

Past Other Students/Mentees

Sarah M. Laper, Eastern Virginia Medical School student (2015) CWRU summer volunteer research

- 9th Annual National Conference on Health Disparities and 2016 National Environmental Justice Conference and Training Program (Poster presentation and travel scholarship (declined due to conflict in schedule), Washington, DC, March 9, 2016.
- Current position: MetroHealth Resident Physician (2018-present)

Julia Cuva, Mentor High School senior in Mentor, OH (2016-2017) Academic year research

- The impact of genetic ancestry on the risk of developing chronic kidney disease, Northeastern Ohio Science and Engineering Fair, John Carroll University, University Heights, OH, March 6-9, 2017.
    - Second place overall
    - Special Awards
        - CWRU - Frances Payne Bolton School of Nursing
        - Cleveland Clinic, Department of Pathobiology
        - Cleveland Clinic, Department of Immunology

Kimberly Heath Borrero, University of Puerto Rico Ponce undergraduate (2017) Case Western Reserve University Heart, Lung, and Blood (HLB) Summer Research Program

- Characterization of genetic ancestry among chronic kidney disease patients, Annual Biomedical Research Conference for Minority Students (ABRCMS) (Poster presentation and travel award), Phoenix, AZ, November 1-4, 2017.

Gabriela DeFurio, Case Western Reserve University undergraduate (388S, Fall 2018) SAGES Capstone and independent research project research sponsor. This 3-credit hour research project spanned the fall semester and required reading from the primary scientific literature, weekly meetings, and data analysis of genetic data linked to electronic health records.

- The project culminated in a short research paper and a poster presentation titled "Genetic Variation and Chronic Kidney Disease" as part of the CWRU Support of Undergraduate Research and Creative Endeavors (SOURCE) in Cleveland, OH on December 7, 2018.

Jessica Cooke Bailey, PhD (2016-2020) KL2 scholar Research Mentor for Case Western Reserve University School of Medicine Instructor, Population and Quantitative Health Sciences

- Current position: CWRU PQHS Assistant Professor (January 2018-present)

COURSEWORK

Previous Classes and Lectures

Spring 1997	Human and Molecular Genetics. MEDI 545/IBS 505. Emory University, Atlanta, GA. Small-group seminar facilitator teaching assistant. (Teaching requirement for PhD program; audience: medical school students and graduate students)
Spring 1999	Human and Molecular Genetics. MEDI 545/IBS505. Emory University, Atlanta, GA. Small-group seminar facilitator substitute teaching assistant (audience: medical school students and graduate students).
October 25, 2006	American Society of Human Genetics Outreach to Teach. Honors Biology…Only the Beginning. Vanderbilt University, Nashville, TN. Lecturer (audience: high school students).
September 19, 2007	Epidemiology 1: Research Design. Genome-wide association studies--why all the excitement? Vanderbilt University, Nashville, TN. Lecturer (audience: graduate students and MPH students).
February 27, 2008	Capstone Course. Genome-wide association studies. Rheumatoid arthritis. Vanderbilt University, Nashville, TN. Lecturer (audience: medical school students).
April 14, 2008	GWAS: The Future. Center for Human Genetics Research workshop series Making Sense of the Human Genome (Genome-wide Association Studies), Vanderbilt University, Nashville, TN. Lecturer (audience: graduate students, post-doctoral fellows, staff scientists).
Spring 2008-2009	Tutorials in Statistical and Population Genetics. Vanderbilt University graduate course MPB/HGEN 371. One-hour journal-club style presentations by graduate students from current literature. Co-course director with Dr. Chun Li.
November 16, 2009	Bioregulation I. Vanderbilt University Integrated Graduate Program graduate course. The Hunt for Human Genes, Part I. Vanderbilt University, Nashville, TN. Lecturer (audience: graduate students).
November 12, 2010	Master of Science in Clinical Investigation (MSCI) Program. More of the Molecular Toolbox - Types of Genetic Markers, Methods of Genotyping and Microarrays. Vanderbilt University, Nashville, TN. Lecturer

(audience: Masters students).

Fall 2010-2013 Personalize This! Direct-to-Consumer Genetic Products. Biological Sciences 105, Vanderbilt University, Nashville, TN. Lecturer (audience: undergraduates).

Spring 2007-2010 Human Genetics II. Vanderbilt University graduate course MPB/HGEN 341. Three to five 1 1/2 hour lectures covering various topics in human genetics including epidemiology in genetics, determining the genetic component of a trait, polymorphisms in the Human Genome, and applications of methods using cardiovascular disease as an example.

Spring 2010-2014 Genetic epidemiology, course director. Vanderbilt University graduate course MPB/HGEN 390. One and a half hour upper-level class covering various topics in human genetic epidemiology. Co-course director with Drs. Scott Williams (2010-2012) and Will Bush (2014).

Spring 2012-2014 Human Genetics II, course director. Vanderbilt University graduate course. MPB/HGEN 341. One and a half hour upper-level class covering various fundamental topics in human genetics and genetic epidemiology. The course is required of all PhD students in the Program in Human Genetics.

2011-2014 Center for Human Genetic Research Journal club, co-director. Vanderbilt University. Non-credit, informal gathering of students, faculty, and staff to discuss current articles relevant to human genetics and ocular genomics. Journal club meets twice a month during the academic year and once a month during the summer. Topics include scientific articles in the literature as well as articles in the literature and lay media related to ethics, responsible conduct in research, effective scientific communication, diversity in the sciences, equal pay, work/life balance, etc.

November 16, 2015 Personalize This! Direct-to-Consumer Genetic Testing. EPBI 501, Case Western Reserve University, Cleveland OH. Lecturer (audience: graduate students and faculty).

November 28, 2018 Genome-wide association studies 2. PQHS 451, Case Western Reserve University Cleveland, OH. Lecturer (audience: graduate students).

Current Classes and Lectures

Spring 2015-present Communicating in Population Health Science Research, course director. Case Western Reserve University graduate course. PQHS 444 (formerly EPBI 444). A two-hour graduate-level class covering various forms of scientific communication including writing and oral presentations. This course is required of all Masters and PhD students in Population and

Quantitative Health Sciences (formerly Epidemiology and Biostatistics).

Spring 2015, 2017-2019 — On Being A Professional Scientist, faculty participant. Case Western Reserve University graduate course. IBMS 500. A mandatory zero credit hour weekly ethics course for first year graduate students. This course offers a 30-40-minute lecture on a specific ethics topic followed by a 45-minute faculty-led small group discussion. Topics covered include defining scientific integrity, mentorship, live animal subjects, data management, research misconduct and policies, commercialization and intellectual property, safe laboratory practices, responsible authorship (publication and peer review), conflicts of interests (personal, professional, and financial), human subjects (IRBs, tissue and databank research), collaborative research, self-promotion in science and social media, and the scientist as a responsible member of society.

Fall 2015, 2017, 2018 — Introduction to Population Health, guest lecturer (human genetics and health disparities). Case Western Reserve University graduate source. PQHS 440 (formerly EPBI440). A three-hour graduate-level course that introduces students to the emerging and complex field of population health, which looks beyond individual outcomes and singular determinants of health and disease. This course is required of all Masters and PhD students in Epidemiology and Biostatistics.

Fall 2015-present — Health Care Analytics (formerly known as Secondary Analysis of Large Health Care Data Bases), course director of electronic health records one credit hour. Case Western Reserve University graduate course. PQHS 515 (formerly EPBI515). A three-hour graduate-level class covering common large-scale secondary data bases generated for research, health care, administration/billing, or other purposes. This course is required for the Health Behavior and Prevention PhD Program Concentration in the Department of Epidemiology and Biostatistics and is an elective for other Masters and PhD students.

Fall 2019 — Integrated Thinking in Population and Quantitative Health Sciences, co-facilitator for phenome-wide association studies and pleiotropy. Case Western Reserve University graduate course. PQHS 472. A two-hour graduate-level class based on the scientific literature where a specific disease is used each semester as a test case of integration of different domains of knowledge for improved understanding of disease etiology and development of prevention and treatments. This course is required all PhD students in Epidemiology and Biostatistics.

2015-present — Case Western Reserve University School of Medicine MD Thesis Reviewer. All CWRU medical school students are required to complete a thesis based on research performed in the Research Block (four months).

	The thesis is submitted in the fourth year of medical school and reviewed by faculty. Typically, faculty review one to three theses per year.
2017-present	Case Western Reserve University School of Medicine Portfolio Reviewer. All CWRU medical students are required to complete Summative ePortfolio essays at three points of time during the Western Reserve $(WR)_2$ Curriculum: at the end of Year 1, at the end of Year 2, and after core clerkship rotations. The narrative essays are written by the students with accompanying evidence to demonstrate how a student is progressing with respect to meeting the milestones aligned to the Educational Program Objective of the CWRU SOM curriculum. The essays are reviewed by faculty, and faculty typically review one to three essays per round.

Workshops

July 23-24, 2003	From Genome to Disease. Identifying Haplotypes for Genotype-Phenotype Analysis. NHLBI/NIH, Bethesda, MD. Lecturer.
Sept 8-10, 2003	Variation Discovery Workshop. Applying Data from the PGA-Haplotypes. University of Washington, Seattle, WA. Lecturer.
July 12-14, 2004	Variation Discovery Workshop. Applying Data from the PGA - Haplotypes. University of Washington, Seattle, WA. Lecturer.
April 25-26, 2005	SeattleSNPs Variation Workshop. SNP Selection. Washington University, St. Louis, MO. Lecturer.
May 2, 2005	Genomic Applications in Heart, Lung, Blood, and Sleep Disorders Research. SNP Discovery and Analysis: Application to Association Studies. Morehouse School of Medicine, Atlanta, GA. Lecturer
July19-20, 2005	From Genome to Disease II. SNP Discovery and Analysis: Application to Association Studies. NHLBI/NIH, Bethesda, MD Lecturer.
Sept 12-13, 2005	Variation Discovery Workshop. Picking SNPs: Application to Association Studies. University of Washington, Seattle, WA. Lecturer.
January 30-31, 2006	SNP Workshop: Bioinformatics and genotyping. Picking SNPs: Application to Association Studies. NIEHS, Research Triangle Park, NC. Lecturer.
March 20-21, 2006	Variation Discovery Workshop. SNP Selection. University of Washington, Seattle, WA. Lecturer.

May 15-16, 2006	Program for Genomic Applications Traveling Tutorials. Tools for Association Studies: Candidate genes and quantitative phenotypes. Washington University, St. Louis, MO. Lecturer.
October 2-3, 2006	Program from Genomic Applications Traveling Tutorials. Tools for Association Studies: Candidate genes and quantitative phenotypes. University of Alabama at Birmingham, Birmingham, AL. Lecturer.
January 10-11, 2008	NIEHS SNPs Workshop. SNP Selection. Association Analysis. University of Louisville, Louisville, KY. Lecturer.
Apr/May 2008-2013	Genetic Analysis of Complex Human Diseases. Gene-Gene and Gene-Environment Interactions. Miami Institute for Human Genomics, University of Miami, FL. Lecturer.
February 18-19, 2009	Variation Discovery Workshop. SNP Selection and Association Analysis. Centers for Disease Control and Prevention, Atlanta, GA. Lecturer.
March 25, 2011	Direct-to-Consumer Testing: The Promotions and the Products. Center for Human Genetics Research workshop series Making Sense of the Human Genome (DNA Testing and You), Vanderbilt University, Nashville, TN. Lecturer.
April 2011-2012	Personalized Medicine. Vanderbilt Medical School II (VMS II), Vanderbilt University School of Medicine, Nashville, TN. Lecturer.
May 2011-2013	Genetic Analysis of Complex Human Diseases. Genome and Variation Databases. Miami Institute for Human Genomics, University of Miami, FL. Lecturer.

RESEARCH SUPPORT

ACTIVE

1UH3 DK114908-01 (Poggio) 07/01/2019-06/30/2022
NIH/NIDDK
Cleveland Precision Medicine Chronic Kidney Disease Cohort
The Cleveland KPMP Recruitment Network Site proposes to recruit patients with chronic kidney disease for the larger Kidney Precision Medicine Project (KPMP).
Role: Co-investigator

1UL1 TR002548-01 (Konstan) 05/15/2018-03/31/2023
NIH/NCATS
Clinical and Translational Science Collaborative of Cleveland
The Clinical and Translational Science Collaborative (CTSC) of Cleveland is a collaborative venture among five Cleveland health institutions - Case Western Reserve University, the

Cleveland Clinic, University Hospitals, MetroHealth Medical Center, and the Veterans Administration Medical Center, as well as community partners.
Role: Co-investigator for the Informatics Component (Lead: Jonathan Haines)

1R01 GM126249-02 (Bush and Crawford) 09/30/2018-06/30/2021
NIH/NIGMS
An Atlas of Clinical Associations Mapping to Variants within Protein Structures
This proposal aims to develop and refine methodology for grouping variants within protein structural space for functional association studies and to construct a mapping between three-dimensional protein regions and clinical outcomes using a two-stage Phenome-Wide Association Study in whole-exome sequencing data linked to electronic health records.
Role: MPI

DiaComp Pilot and Feasibility Program (O'Toole, Crawford) 11/01/2018-10/31/2019 NCE
NIH/NIDDK
Automated Identification of Diabetic Individuals with Renal Complications
This study will use rule-based algorithms to identify subjects with diabetic kidney diseases from an EHR-derived research database, and assess the precision and accuracy of key phenotypic variables and outcomes by comparing EHR data to curated kidney disease databases.
Role: Co-PI

I01 BX004557-01 (Peachey)
VA 04/01/2019-03/31/2023
Deciphering Genetic and Environmental Influences on Visual Disorders in the Million Veteran Program
The proposal aims to perform single variant analysis for ocular phenotypes representing the most common ocular diseases, to identify common and rare variants in the multi-ethnic MVP population and perform cross-trait analyses and PheWAS for various ocular and physiologic phenotypes to identify shared (and private) genetic and environmental risk factors.
Role: Co-investigator

1R03 AG063229-01 (Crawford) 05/01/2019-02/28/2021
NIH/NIA
T-cell Receptor Repertoires and Alzheimer's disease
We aim to characterize T-cell receptor profiles among cases and controls of Alzheimer's disease in Amish living in Ohio and Indiana.
Role: PI

CTSC Large Pilot Grants (Bush) 08/01/2020 – 07/31/2021
NIH/NCATS
Glycemic Control and COVID-19 Disease Severity among Patients with Chronic Kidney Disease
We aim to investigate the effect of T2D control on COVID-19 disease severity among CKD patients at the Cleveland Clinic in Cleveland, OH using electronic health records and an existing CKD registry.
Role: Co-investigator

PENDING

1R13 HG011436 (Crawford) 07/01/2020-06/31/2022
NIH/NHGRI
Data Lakes Meet the Great Lakes: Deep Dives into Diversity in Genomics
We aim to host an annual symposium every fall focused on precision medicine, big data genomics, and diversity. This proposal aims to support trainees and early career scientists for travel to the symposium.
Role: PI
Score: 11

COMPLETED

1R13 HG010286-01 (Crawford) 08/17/2018-07/31/2020
NIH/NHGRI
Sequencing and Genotyping in Diverse Populations: Who Wants What Back (and When)?
This proposal supports travel scholarships for trainees and early investigators to attend the annual North Coast Conference on Precision Medicine held in Cleveland, OH every fall.
Role: PI

CTSC Large Pilot Grants (Crawford) 08/03/2018-04/30/2019
NIH/NCATS
T-cell receptor diversity as a marker of chronic kidney disease (CKD) progression among hypertensive non-diabetic African American patients with CKD stages 3-5
The proposal pilot study will characterize the immune profiles of African American CKD patients using TCR diversity as proxy. The main goal is to assess TCR diversity as a marker for CKD stage and possible predictor of progression to end stage renal disease (ESRD).
Role: PI

I01 BX003364A1 (Konicki/Peachey) 10/01/2016-09/30/2018
VA
Genetic Risk for AMD in Diverse Veteran Populations
The goals of this project are to determine whether AMD risk alleles are shared across different ethnic populations, whether the identified genes will be replicated in an independent population, and to determine whether a relationship exists between AMD genes and biomarkers related to blood lipid chemistry.
Role: Co-investigator

1R13 HG009481-01 (Crawford) 09/20/2016-07/31/2018
NIH/NHGRI
Precision Medicine for All
This proposal supports travel scholarships for trainees and early investigators to attend the annual North Coast Conference on Precision Medicine held in Cleveland, OH every fall.
Role: PI

Nord Grant (Crawford) 07/01/2016-06/30/2017
CWRU/UCITE
The Lacks Family on Consent and Community Engagement in the Era of Precision Medicine
The Nord Grants, offered through CWRU's University Center for Innovation in Teaching and Education (UCITE), fund projects that directly benefit student learning or indirectly benefit students through faculty development. This grant will support, in part, the invitation of the Lacks Family to speak at CWRU about their family's collective experience in biomedical research projected onto today's environment of precision medicine research. The Lacks Family will speak at CWRU's Institute for Computational Biology (ICB) annual symposium or the equivalent organized by ICB and Dr. Crawford.
Role: PI

5UL1 TR000439-09 (Konstan) 09/17/2007-05/31/2017
NIH/NCATS
Clinical and Translational Science Collaborative of Cleveland
The Clinical and Translational Science Collaborative (CTSC) of Cleveland is a collaborative venture among five Cleveland health institutions - Case Western Reserve University, the Cleveland Clinic, University Hospitals, MetroHealth Medical Center, and the Veterans Administration Medical Center, as well as community partners. The CTSC Core Resources, including the CTSC Office of Comparative Effectiveness Research (CER) Core, are organized into twelve groups by area of expertise. Collectively these Cores help in the development of clinical and translational research studies and tools, facilitate clinical-investigator interfaces and community outreach, provide education, and administer and track CTSC activities.
Role: Co-investigator

Institute for Computational Biology Pilot Grant (Crawford) 03/01/2016-02/28/2017
CWRU/ICB
MetroHealth-Institute for Computational Biology Pilot study (MIPs)
This pilot study funds the collection of biospecimens from consented MetroHealth patients for precision medicine research. Participants are also surveyed on their attitudes towards biobanking as envisioned by the larger Precision Medicine Initiative Cohort Program and return of research results.
Role: PI

T32 GM80178-07 (Haines) 07/01/2012-11/12/2013
(Crawford) 11/13/2013-6/30/2014
(Samuels) 07/01/2014-06/30/2017
NIH/NIGMS
Training Program on Genetic Variation and Human Phenotypes
This training grant provides five slots for graduate-level training towards a PhD in human genetics.
Role: PI

5U01 HG006385-03 (Haines) 08/15/2011-01/06/2014
(Harris and Crawford) 01/07/2014-05/18/2014
(Harris) 05/19/2014-07/31/2015

NIH/NHGRI
eMERGE Coordinating Center
The goal of this proposal is to coordinate the efforts and activities of the individual sites within the eMERGE network.
Role: Multiple-PI

5U91 HL065962-13 (Roden) 04/01/2000-06/30/2015
NIH/NHLBI
Pharmacogenomics of Arrhythmia Therapy
The goal of this study is to identify genetic variation important for arrhythmias such as drug-induced Long QT syndrome, atrial fibrillation and complications on warfarin therapy. As co-investigator, I lead candidate gene and genome-wide association studies to identify genetic variants that impact risk for drug-induced Long QT syndrome. I also lead BioVU and NHANES genetic analyses as part of the larger International Warfarin Pharmacogenomics Consortium (IWPC). I am also a member of P-STAR, a group within PGRN that has the goal of providing statistical resources and guidance for projects related to pharmacogenomics as part of the Pharmacogenetics Research Network (PGRN).
Role: Co-investigator

5U01 HG006378-03 (Roden) 08/15/2011-07/31/2015
NIH/NHGRI
Vanderbilt Genome-Electronic Records Project
The primary goal of this project is to assess the usefulness of biobanks in performing genome-wide association studies. This grant will fund the study design of a genome-wide association study. This grant will also support work towards developing tools to mine the electronic medical records and tools to de-identify these data for use in human genetics. As co-investigator, I lead the BioVU genomic analyses as part of the larger electronic Medical Records & Genomics (eMERGE) Network. I will also design studies to assess the contribution genetic variants, alone or in combination, contribute risk to clinically-relevant outcomes to identify “actionable variants” for the network.
Role: Co-investigator

5R01 LM010685-03 (Denny) 09/1/2011-08/31/2014
NIH/NLM
From GWAS to PheWAS: Scanning the EMR phenome for gene-disease associations The overall goal of this proposal is to systematically identify pleiotropic associations using DNA samples linked to electronic health records.
Role: Co-investigator

5R01 CA092447-12 (Blot) 09/26/2011-06/30/2016
National Cancer Institute
Southern Community Cohort Study
The Southern Community Cohort Study is a large, prospective epidemiology cohort study designed to investigate the environmental and genetic causes for racial disparities in cancer and other health outcomes.
Role: Co-investigator

W81XWH-12-1-0547 (Aldrich) 09/15/2012-09/14/2014
DoD
Prognosis of Lung Cancer: Heredity or Environment?
The goal of this project is to identify genetic risk factors in lung cancer, and to determine the potential role of environmental factors and how they interact with the genetic risk factors.
Role: Co-investigator

VUMC42613 5R01 DK078616-05S1 (Meigs/Kabagambe) 12/01/2013-11/31/2014
NIH/NIDDK
Meta-analysis of Type 2 Diabetes in African Americans - the MEDIA Consortium The primary goal of this proposal is to identify genetic variants associated with risk of type 2 diabetes in African Americans. This supplement will support the addition of data from the Southern Community Cohort Study and/or BioVU, the Vanderbilt biorepository linked to de-identified electronic medical records to the parent grant, *Common Genetic Variation and Quantitative Diabetes Traits*.
Role: Co-investigator

(Villegas) 04/01/2014–01/31/2015
Vanderbilt Diabetes Research and Training Center
Insulin resistance genes and type 2 diabetes in African Americans
In this pilot study, we aim to identify common and rare variants as associated with type 2 diabetes in African Americans. The scope of inquiry will be limited to genes known to be involved in insulin resistance. We will also characterize the potential modifying effects of body mass index on these genetic associations.
Role: Co-investigator

VR4427 (Crawford) 2012-2013
Vanderbilt Institute for Clinical and Translational Research (VICTR)
APOC3 R19X and very low triglyceride levels in European Americans
This VICTR voucher provided the funds to genotype 184 individuals in BioVU (Vanderbilt's biorepository linked to de-identified electronic medical records) with very low triglyceride levels on the Illumina ExomeChip.
Role: PI

VR3288 (Dumitrescu) 2012-2013
Vanderbilt Institute for Clinical and Translational Research (VICTR)
Replication of MI Associations in African American BioVU Samples
This VICTR voucher provided the funds to genotype individuals in BioVU (Vanderbilt's biorepository linked to de-identified electronic medical records) with and without myocardial infarction (MI) to replicate an association identified in NHANES III between MI and *LPA* variants.
Role: Co-investigator

3U01 HG004798 (Crawford) 07/01/2008-12/31/2013
NIH /NHGRI

Epidemiologic Architecture for Genes Linked to Environment (EAGLE)
The primary goal of this project is to describe the epidemiologic architecture of genetic variations identified through genome-wide association studies (GWAS) using a population-based, diverse cross-sectional survey known as the National Health and Nutrition Examination Survey (NHANES). We will also replicate previously published GWAS and identified potential mitochondrial and/or environmental modifiers. ARRA supplement provided funds for genotyping ancestry informative markers in NHANES III and NHANES 1999-2002. ARRA supplement provided funds to identify and genotype cases and controls for eight major cancers in BioVU, the Vanderbilt DNA Databank, for eventual meta-analysis in the Population Architecture using Genomics and Epidemiology (PAGE) Study.
Role: PI

5RC2 GM092618-02 (Denny/Roden) 09/30/2009-01/31/2012
NIH/NIGMS
VESPA: Vanderbilt Electronic Systems for Pharmacogenomic Assessment
The overall goal of this project is to use the Vanderbilt DNA Databank (BioVU) to identify cases of adverse reactions to medication and controls for pharmacogenomic studies using the ADME developed by Illumina. As co-investigator, I lead the genomic study design and analysis of outcomes and traits related to pharmacogenomics. I also lead the quality control efforts for these large datasets in BioVU.
Role: Co-investigator

CRC1599 (Edwards) 2009-2010
Vanderbilt Institute for Clinical and Translational Research (VICTR)
INF 15.06 Pilot Study of the Genotypic Analysis of Patients Infected with Influenza Virus Compared with Matched Uninfected Controls (DMID 06-0092)
This VICTR voucher provided the funds to collect and extract DNA from blood and mouthwash samples from children exposed to the influenza vaccine for an eventual genome-wide association study of adverse reactions (wheezing) following vaccination.
Role: Co-investigator

200-2002-00732 (Edwards) 10/01/2002-09/30/2008
CDC
Vaccine Safety Surveillance and Assessment
The overall goal of this multi-center study is to examine clinical immunization safety assessment of children.
Role: Co-investigator

VICTR PN_1829 (Crawford) 2008-2009
Vanderbilt Institute for Clinical and Translational Research (VICTR)
Genetic determinants of lipids among nonfasting children
This VICTR voucher provided the funds for targeted genotyping NHANES III participants (n=7,159) to replicate a genome-wide association study performed in non-fasting children ascertained by St. Jude Children's Hospital.
Role: PI

VICTR PN_1860 (Ritchie) 2008-2009
Vanderbilt Institute for Clinical and Translational Research (VICTR)
Ancestry informative markers in the Vanderbilt DNA databank
This VICTR voucher provided the funds for genotyping the Illumina DNA Test Panel (360 SNPs) in BioVU, the biorepository linked to electronic medical records, for ancestry informative markers and other quality control metrics. The pilot phase genotyped almost 2,000 samples and the full project included the first 9,000 DNA samples in BioVU.
Role: Co-investigator

RSnG G78 (Crawford) 09/13/06-10/01/07
NIH/NHLBI
Defining the role of candidate gene variation in the quantitative phenotypes related to heart disease
This Re-sequencing and Genotyping (RSnG) award provided genotyping support for 384 SNPs on 7,159 samples from NHANES III. The SNPs will be genotyped on a set of 12 candidate genes whose intermediate phenotypes are associated with increased risk for coronary artery disease.
Role: PI

RSnG G62 (Lingappa) 09/13/2006-10/01/2007
NIH/NHLBI
Genetic factors in invasive pneumococcal disease
This Re-sequencing and Genotyping (RSnG) award provided genotyping support for 384 SNPs on approximately 1,000 DNA samples of cases with pneumococcal disease and population-based controls.
Role: Co-investigator

5P30 ES007033-12 (Crawford) 10/01/2006-03/31/2007
Univ. of Washington NIH/NIEHS
Center for Ecogenetics and Environmental Health
The primary goal of this project is to identify associations between triglycerides measured in the National Health and Nutrition Examination Survey (n=7,159) and SNPs in the candidate gene *APOA4*. This grant supports the genotyping of *APOA4*.
Role: PI

1 F32 HL079864-01 (Crawford) (Awarded 12/22/2004; declined)
NRSA Post-Doctoral Fellowship NIH-NHLBI
Genetic determinants of baseline CRP from NHANES III
Role: PI

5 F31 HD08443-02 (Crawford) 07/01/1998 – 05/15/2000
National Research Service Award NIH-NICHHD
Minority Predoctoral Fellowship Program
Role: PI

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Underlined authors represent Crawford lab trainees.

PEER REVIEWED ARTICLES

1997

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2. Savage A, Sun F, **Crawford D**, Ashley A, Yang Q, and Sherman SL. Sequential sibpair and association studies to detect genes in quantitative traits. *Genetic Epidemiology*, 14:885-890 (1997). PMID: 9433595
This article was selected for an oral presentation (Savage) at the Genetic Analysis Workshop 10 (GAW10) in Watsonville, CA, October 26-29, 1996

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3. Gunter C, Paradee W, **Crawford DC**, Meadows KL, Newman J, Kunst CB, Nelson DL, Schwartz C, Murray A, Macpherson JN, Sherman SL, and Warren ST. Reexamination of factors associated with expansion of CGG repeats using a single nucleotide polymorphism in *FMR1*. *Human Molecular Genetics*, 7(12):1935-1946 (1998). PMID: 9811938

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4. **Crawford DC**, Meadows KL, Newman JL, Taft LF, Pettay DL, Gold LB, Hersey SJ, Hinkle EF, Stanfield ML, Holmgreen P, Yeargin-Allsopp M, Boyle C, and Sherman SL. Prevalence and phenotype consequence of FRAXA and FRAXE alleles in a large, ethnically diverse special education needs population. *American Journal of Human Genetics*, 64(2):495-507 (1999). PMC1377758
This article was selected for an oral presentation (Crawford) at the 6th International Fragile X Syndrome Conference, Asheville, NC, July 26-29, 1998

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5. **Crawford DC**, Schwartz CE, Meadows KL, Newman JL, Taft LF, Gunter C, Brown WT, Carpenter NJ, Howard-Peebles PN, Monaghan KG, Nolin SL, Reiss AL, Feldman GL, Rohlfs EM, Warren ST, and Sherman SL. Survey of the fragile X syndrome CGG repeat and STR- and SNP- haplotypes in an African-American population. *American Journal of Human Genetics*, 66(2):480-493 (2000). PMC1288101
This article was selected for an oral presentation (Crawford) at the European Molecular Biology Organization Workshop, London, England, April 1-3, 1998, the 6th International Fragile X Syndrome Conference, Asheville, NC, July 26-29, 1998, and the American Society of Human Genetics, Denver, CO, October 27-31, 1998
6. **Crawford DC**, Zhang F, Wilson B, Warren ST, and Sherman SL. Fragile X CGG repeat structures among African-Americans: Identification of a novel factor responsible for repeat instability. *Human Molecular Genetics*, 9(12):1759-1769 (2000). PMID: 10915764
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of Human Genetics, Philadelphia, PA, October 3-7, 2000***

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8. Sullivan AK, **Crawford DC**, Scott EH, Leslie MS, and Sherman SL. Paternally-transmitted FMR1 alleles are less stable than maternally-transmitted alleles in the common and intermediate size range. *American Journal of Human Genetics*, 70(6):1532-1544 (2002). PMC379140
9. **Crawford DC**, Meadows KL, Newman JL, Taft LF, Scott E, Leslie M, Shubeck L, Holmgreen P, Yeargin-Allsopp M, Boyle C, and Sherman SL. Prevalence of the fragile X syndrome in African Americans. *American Journal of Medical Genetics*, 110(3):226-233 (2002). PMID: 12116230
10. **Crawford DC**, Bailey DB, Skinner D, Sparkman K, Moore CA, and Olney RS. Delayed diagnosis of fragile X syndrome - United States, 1990-1999. *Morbidity and Mortality Weekly Report (MMWR)*, 51(33):740-742 (2002). PMID: 12201607
11. **Crawford DC**, Caggana M, Harris KB, Lorey F, Nash C, Pass K, Tempelis C, and Olney RS. Characterization of β-globin haplotypes using blood spots from a population-based cohort of newborns with homozygous HbS. *Genetics in Medicine* 4(5):328-335 (2002). PMID: 12394345
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19. **Crawford DC**, Peng Z, Cheng J-F, Boffelli D, Ahearn M, Nguyen D, Shaffer T, Yi Q, Livingston RJ, Rieder MJ, and Nickerson DA. *LPA* and *PLG* sequence variation and kringle IV-2 copy number in two populations. *Human Heredity* 66(4):199-209 (2008). PMC2861532

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