

Laura Katherine Wiley, Ph.D.

Current Position: Assistant Professor
Division of Biomedical Informatics and Personalized Medicine
University of Colorado, Denver

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Education

2005-2009	University of Denver Denver, Colorado	B.S. (Molecular Biology)
2005-2009	University of Denver Denver, Colorado	B.S.Ch. (Chemistry)
2011-2014	Vanderbilt University Nashville, Tennessee <i>"Discovery & Replication of Pathway-Based Trans-eQTL"</i>	M.S. (Biomedical Informatics) Advisor: William S Bush
2010-2016	Vanderbilt University Nashville, Tennessee <i>"Addressing Barriers to Clinical Implementation of Pharmacogenomics"</i>	Ph.D. (Human Genetics) Advisor: Joshua C Denny
2016	Vanderbilt University Medical Center Department of Biomedical Informatics Nashville, Tennessee	Post-Doctoral Fellow
2017-Present	Clinical Faculty Scholars Program Colorado Clinical and Translational Science Institute Denver, Colorado	Scholar

Academic Appointments

2016-Present Assistant Professor
Division of Biomedical Informatics and Personalized Medicine, Department of
Medicine, School of Medicine
Department of Biostatistics and Informatics, Colorado School of Public Health
Member, Computational Biosciences Program
Member, Colorado Center for Personalized Medicine
University of Colorado Denver
Denver, Colorado

2017-Present Adjunct Assistant Professor
 Department of Biomedical Informatics
 Vanderbilt University Medical Center

Other Professional Positions

2004 Research Assistant (PIs: Joel Ernster and Cosimo Sciotto)
 Penrose Hospital Pathology Laboratory
 Colorado Springs, Colorado

2007-2008 Research Fellow (PI: Lori Crane)
 University of Colorado Cancer Center
 University of Colorado Denver
 Aurora, Colorado

2008-2009 Research Assistant (PI: Claude Selitrennikoff)
 Department of Cell and Developmental Biology
 University of Colorado Denver
 Aurora, Colorado

Honors and Awards

2015 Best Student Paper, 2015 AMIA Joint Summits: Clinical Research Informatics

Membership in Professional Organizations

American Society for Human Genetics (2011-Present)

American Medical Informatics Association (2011-Present)

2012-2015	Member, Public Policy Committee
2014	Chair-Elect, Student Working Group (Elected)
2015	Chair, Student Working Group (Elected)
2016	Past-Chair, Student Working Group (Elected)
2014-2017	Member, Membership Committee
2015-Present	Faculty, Biomed & Health Informatics Baccalaureate Course
2015-Present	Member, AMIA Task Force on Women in Informatics
2016-2017	Member, Education Committee
2016-2017	Student Representative to Board of Directors (Elected)
2016-2017	Chair, Working Group Steering Committee (BOD Appointed)

Committees and Service

Intramural

Vanderbilt University

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| 2012 | Secretary, Human Genetics Graduate Student Association |
| 2012 | Secretary, Biomedical Informatics Graduate Student Association |

University of Colorado Denver

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| 2016-Present | Co-Chair, Compass Scientific Advisory Board |
| 2016-Present | Member, Pharmacogenomics Implementation Committee Colorado <ul style="list-style-type: none"> - Member, Drug-Gene Pair Working Group - Member, CDS Working Group - Member, Evaluation Working Group - Member, Education Working Group |
| 2017 | Lung SPORE Internal Advisory Board |
| 2017- Present | Member, Return of Results Roadmap (RRR) Steering Committee |
| 2017-Present | Member, Computational Bioscience Admissions Committee |

Extramural

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| 2012 | Scribe, AMIA 6 th Annual Invitational Health Policy Meeting |
| 2012 | Attendee, AMIA Hill Day |
| 2014 | Attendee, AMIA Hill Day |
| 2014-2015 | Organizer, AMIA Annual Health Policy Invitational Meeting Scribes |
| 2014-2015 | Organizer, AMIA High School Scholars Mentor Program |
| 2015 | Attendee, AMIA Hill Day |
| 2015 | Member, AMIA Common Rule NPRM Response Team |
| 2015-Present | Member, AMIA Task Force on Women in Informatics |
| 2016 | Attendee, AMIA Hill Day |
| 2017 | SPC Member, AMIA 2017 Annual Symposium |
| 2017-2018 | SPC Member, AMIA 2018 Summits |
| 2018-2019 | SPC Member, AMIA 2019 Summits |
| 2018-2019 | Vice-Chair, AMIA 2019 Annual Symposium |

Outreach

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| 2012-2014,2018 | ASHG DNA Day Essay Contest Judge (x4) |
| 2015 | Precision Medicine, Biomedical and Health Informatics Baccalaureate Course, American Medical Informatics Association |
| 2016 | Presenter, TWISTER (Tennessee Women in Science, Technology, Engineering & Research) STEM Conf. for Girls in 9-12 th Grade |

Reviewer

Journal of the American Medical Informatics Association
 Journal of Biomedical Informatics
 Database
 Journal of Cardiovascular Pharmacology
 Briefings in Bioinformatics
 AMIA Annual Symposium
 AMIA Joint Summits on Translational Science
 Academy Health: Health Datapalooza

Presentations

Invited Seminars

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| 1. Informatics Enabled Opportunities for Precision Medicine
University of Alabama Birmingham. Birmingham, AL. | January 2016 |
| 2. Informatics Enabled Opportunities for Precision Medicine
University of Washington, Seattle, WA. | March 2016 |
| 3. Informatics Enabled Opportunities for Precision Medicine
University of Tennessee Health Science Center, Memphis, TN. | March 2016 |
| 4. Informatics Enabled Opportunities for Precision Medicine
University of Colorado Denver, Denver, CO. | June 2016 |
| 5. Precision Medicine and the Learning Healthcare System
Duke University, Durham, NC. | December 2016 |

Conference Presentations*Keynote*

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| 1. Precision Medicine and the Learning Healthcare System:
Leveraging Informatics to Improve Care
14 th Annual Rocky Mountain Bioinformatics Conference,
Keystone, CO. | December 2016 |
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Invited

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| 1. Informatics Enabled Opportunities for Genomic Precision
Medicine, Pathology Informatics Summit. Pittsburgh, PA. | May 2017 |
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Podium

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| 1. ICD-9 Tobacco Use Codes are Effective Identifiers of Smoking
Status, 2 nd Annual Translational Bioinformatics Conference.
Jeju, South Korea. | October 2012 |
| 2. Discovery and Replication of Pathway-Based Trans-eQTL
Associations, 62 nd Annual Meeting of the American Society | October 2012 |

- for Human Genetics. San Francisco, CA.
3. Using a Biobank Linked to Electronic Medical Records to Identify Non-Specific Clinically Associated Genetic Variants, AMIA Joint Summits on Translational Bioinformatics. San Francisco, CA. April 2014
 4. Translation of Pathway-Based Trans-eQTL to Human Phenotypes, AMIA Joint Summits on Translational Bioinformatics. San Francisco, CA. March 2015
 5. Phenotyping Adverse Drug Reactions: Statin-Related Myotoxicity, AMIA Joint Summits on Clinical Research Informatics. San Francisco, CA. March 2015
*Selected as Best CRI Student Paper
 6. Incorporation of Decision Support in Pharmacogenomics, ACMG Annual Clinical Genetics Meeting. Tampa, FL. March 2016
 7. Evaluating Physician Response to Pharmacogenomic-Guided Warfarin Dosing in a Hospitalized Population. AMIA Joint Summits on Translational Bioinformatics. San Francisco, CA. March 2016
 8. Strategies for Equitable Pharmacogenomic-Guided Warfarin Dosing Among European and African American Individuals in a Clinical Population. Drug Safety Gordon Research Seminar. Boston, MA. June 2016
 9. Strategies for Equitable Pharmacogenomic-Guided Warfarin Dosing Among European and African American Individuals in a Clinical Population. Pacific Symposium on Biocomputing. Kona, HI. January 2017

Panels

1. Panelist, Harnessing Next-Generation Informatics for Personalizing Medicine: Report from the 2014 AMIA Health Policy Invitational Meeting, Annual Symposium of the American Medical Informatics Association. Washington DC. November 2014
2. Organizer and Moderator, Career Opportunities for the Many Paths to Informatics. Annual Symposium of the American Medical Informatics Association. San Francisco, CA. November 2015
3. Organizer and Moderator, Career Opportunities for the Many Paths to Informatics, AMIA Joint Summits on Translational Bioinformatics. San Francisco, CA. March 2016
4. Panelist, 'My Work Will Surely Speak for Itself': Visibility, Networking, and Self Promotion in Informatics, Annual Symposium of the American Medical Informatics Association, Washington, DC. November 2017

Workshops

1. Organizer, Diversity and Disparity in Biomedical Informatics Pacific Symposium on Biocomputing, Kona, HI. January 2018

Tutorials

1. Using R for Healthcare Data Science, Co-taught with Vojtech Huser, Annual Symposium of the American Medical Informatics Association. San Francisco, CA November 2015

Webinars

1. Navigate AMIA: Students and Young Professionals November 2015

Teaching Experience

2007-2016 Faculty, Kaplan Test Prep & Admissions; Denver, Nashville, Online

Course Director

- 2018-2019 Clinical Data Science Specialization, Coursera
 2018 BSBT6310: Practical Clinical Research Informatics, University of Colorado Denver; Co-Taught with Michael Kahn
 2018 Personalized Medicine Elective, SOM, University of Colorado Denver; Co-Taught with Janet Corral

Guest Lectures

- 2014 HL7 Immunization Messages Programming Lab, Introduction to Biomedical Informatics, Vanderbilt University
 2015 Precision Medicine, Biomedical and Health Informatics Baccalaureate Course, American Medical Informatics Association
 2015 Performing Manual Review in the Synthetic Derivative, BioVU Study Design, Vanderbilt University
 2015 Medication Data in the Synthetic Derivative, BioVU Study Design, Vanderbilt University

Conference and Community Tutorials

- 2014 Making ggplot2 Sing, Nashville UseR Group
 2015 Introduction to R and ggplot for Genetics, Vanderbilt Genetics Student Association
 2015 Knitr and R Markdown for Reproducible Workflow, Nashville UseR Group
 2015 Overview of ggplot2 and the "Grammar of Graphics", Nashville Data Science Group
 2015 The Data Scientist's Workflow in R, Nashville UseR Group
 2015 Using R for Healthcare Data Science, AMIA Fall Symposium

Grant Support

Grant Funding

2011-2013	T32GM08178 (PI: Haines)	Role: Trainee
	Training Program on Genetic Variation and Human Phenotypes	
2014-2015	T15LM007450 (PI: Gadd)	Role: Trainee
	Vanderbilt Biomedical Informatics Training Program	
2015-2016	U01HG007253 (PI: Denny & Levy)	Role: Trainee
	Integrated, Individualized, Intelligent Prescribing (I3P)	
2016-2017	U01HG007253 (PI: Denny & Levy)	Role: Consultant
	Integrated, Individualized, Intelligent Prescribing (I3P)	
2017-Present	P30CA046934-29 (PI: Theodorescu)	Role: Co-I
	University of Colorado Cancer Center Support Grant – Administrative supplement	
2018-Present	R01HL104608 (PI: Barnes)	Role: Co-I
	New Approaches for Empowering Studies of Asthma in Populations of African Descent	
2018-Present	D2V Pilot Grant (PIs: Wiley, Roark)	Role: Co-PI
	Data Informed Management of Intracranial Aneurysms	

Other Sources of Support

2007	Fellowship, University of Colorado Cancer Center
2009	Preisendanz-Schmid Thesis Scholarship, University of Denver
2011	Travel Grant, Vanderbilt Graduate School
2012	Travel Award, Translational Bioinformatics Conference
2012	Travel Grant, Vanderbilt Graduate School
2013	Travel Grant, Vanderbilt Graduate School
2014	Travel Grant, Vanderbilt Graduate School
2015	Travel Grant, Vanderbilt Graduate School
2016	Travel Award, NIH/NLM Pacific Symposium on Biocomputing

Publications

Peer Reviewed Publications

1. **Wiley LK**, Shah A, Xu H, Bush, WS. ICD-9 tobacco use codes are effective identifiers of smoking status. *JAMIA* 2013. PMID: [23396545](#)
2. **Wiley LK**, Sivley RM, Bush WS. Rapid storage and retrieval of genomic intervals from a relational database system using nested containment lists. *Database* 2013. PMID: [23894185](#)
3. **Wiley LK**, Moretz JD, Denny JC, Peterson JF, Bush WS. Phenotyping Adverse Drug Reactions: Statin-Related Myotoxicity. *AMIA Summits Transl Sci Proc.* 2015. PMID: [26306287](#)

- Selected as Best CRI Student Paper
4. **Wiley LK***, Tarczy-Hornoch P*, Denny JC, Freimuth RR, Overby CL, Shah NH, Martin RD, Sarkar IN. Harnessing next-generation informatics for personalizing medicine: a report from AMIA's 2014 Health Policy Invitational Meeting. *JAMIA*. 2016. PMID: [26911808](#)
 - Highlighted in the 2016 AMIA Joint Summits Clinical Research Informatics Year in Review and the 2017 AMIA Joint Summits Translational Bioinformatics Year in Review*Co-first author
 5. **Wiley LK**, VanHouten JP, Samuels DC, Aldrich MC, Roden DM, Peterson JF, Denny JC. Strategies for equitable pharmacogenomic-guided warfarin dosing among European and African American individuals in a clinical population. *Pac. Symp. Biocomput.* 2017. PMID: [27897005](#)
 6. Southerland WM, Swamidass SJ, Payne PR, **Wiley LK**, Williams-Devan C. The diversity and disparity in biomedical informatics (DDBI) workshop. *Pac. Symp. Biocomput.* 2018. PMID: [29218919](#)
 7. Ching T, Himmelstein DS, Beaulieu-Jones BK, Kalinin AA, Do BT, Way GP, Ferrero E, Agapow PM, Xie W, Rosen GL, Lengerich BJ, Israeli J, Lanchantin J, Woloszynek S, Carpenter AE, Shrikumar A, Xu J, Cofer EM, Harris DJ, DeCaprio D, Qi Y, Kundaje A, Peng Y, **Wiley LK**, Segler MHS, Gitter A, Greene CS. Opportunities and Obstacles for Deep Learning in Biology and Medicine. *J. R. Soc. Interface.* 2018. PMID: [29618526](#)

Book Chapters

1. Denny JC, **Wiley LK**, Peterson JF. Use of Clinical Decision Support to Tailor Drug Therapy Based on Genomics, in *Clinical Decision Support Systems: Theory and Practice* (3rd edition). Publisher: Springer, Editor: Eta Berner. 2016.

Abstracts

1. **Wiley LK**, Bush WS. High-throughput annotation of genomic variants using a relational database system. 61st Annual Meeting of the American Society for Human Genetics, Montreal, QC, Canada, 2012.
2. **Wiley LK**, Bush WS. Discovery and replication of pathway-based trans-eQTL associations. 62nd Annual Meeting of the American Society for Human Genetics, San Francisco, CA, 2012.
3. **Wiley LK**, Goodloe R, Farber-Eger E, Boston J, Crawford DC, Bush WS. Association of MetaboChip variants to systolic blood pressure in African Americans from a biorepository linked to de-identified electronic medical records. 63rd Annual Meeting of the American Society for Human Genetics, Boston, MA, 2013.
4. **Wiley LK**, Peterson JF, Denny JC, Bush WS. Establishing the Need for Personalized Medicine: Simvastatin Exposure Among a SLCO1B1 Variant Population. Annual Symposium of the American Medical Informatics Association, Washington DC 2013

5. Bastarache L, Bochenek J, Edwards T, Xu Y, Pulley J, Bowton E, Mo H, Wei W, **Wiley L**, Roden D, Denny J. Investigation of Synthetic Association in GWAS using PheWAS and Exome Sequencing. 64th Annual Meeting of the American Society for Human Genetics, San Diego, CA, 2014.
6. **Wiley LK**, Goodloe R, Farber-Eger E, Crawford DC, Bush WS. Using a Biobank Linked to Electronic Medical Records to Identify Non-Specific Clinically Associated Genetic Variants. AMIA Joint Summits on Translational Bioinformatics, San Francisco, CA, 2014.
7. Teixeira P, Davis M, **Wiley LK**, Bastarache L, Smith JC, Carroll RJ, Fabbri D, Roden DM, Denny JC. Improving Phenotypic Granularity with NLP-PheWAS in Multiple Sclerosis. AMIA Joint Summits on Translational Bioinformatics, San Francisco, CA, 2015.
8. **Wiley LK**, Carroll R, Edwards T, Kirby J, Bastarache L, Kuivaniemi H, Tromp G, Jarvik G, Crosslin D, Carrell D, Larson E, Brilliant M, Hebring S, Kullo I, Pathak J, Pacheco J, Kho A, Denny J, Bush W. Translation of Pathway-Based trans-eQTL to Human Phenotypes. AMIA Joint Summits on Translational Bioinformatics, San Francisco, CA, 2015.
9. Prendergast CJ, Predazzi IM, **Wiley LK**, Lilley JS, Van Driest S, Fazio S, McGregor T. Indications and Adverse Effects of Statin Therapy in Children: A Retrospective Electronic Health Record Review. American Heart Association, New Orleans, LA, 2016.
10. **Wiley LK**, Rasmussen LV, Schilling LM. ReviewR: A light-weight, portable tool for viewing individual patient records. OHDSI Symposium Collaborator Showcase, Bethesda, MD, 2018.
11. **Wiley LK**, Kimminau M, McGregor R, Nietfeld S, Moreira K, Wentworth A, Cooper S, Kovar V, Schilling L, Lin C, Levinson A. Connecting cancer patients who smoke to appropriate cessation treatment: Using a native EHR toolkit to automate referral upon first cancer visit. 11th Annual Conference on the Science of Dissemination and Implementation in Health, Washington DC, 2018.