Wesley Lawrence Crouse

Department of Genetics
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Education

PhD, Bioinformatics and Computational Biology, University of North Carolina at Chapel Hill, NC, Fall 2019. Mentors: Dr. Samir Kelada and Dr. William Valdar.

BA, Economics and Mathematics, Minor in History, University of North Carolina at Chapel Hill, NC, Spring 2011.

Professional Experience

2020 – Present	Department of Genetics, University of North Carolina at Chapel Hill, Chapel Hill, NC. Postdoctoral Research Associate – Kelada, Furey, and Valdar Laboratories. Developing Bayesian model selection approach for mediation analysis. Assessing differential gene expression and chromatin accessibility in response to ozone exposure in mouse airway macrophages. Applying correlation network analysis to gene expression in rat adipose.
2014 – 2019	Department of Genetics, University of North Carolina at Chapel Hill, Chapel Hill, NC. Graduate Research Assistant – Kelada and Valdar Laboratories. Developed Bayesian nonparametric approach for haplotype-based genetic association. Designed simulation-based power analyses for QTL mapping in a multiparental population.
2011 – 2014	RTI International, Research Triangle Park, NC. Associate Economist – Public Health and Economics Program. Conducted literature reviews and performed statistical analyses for CDC-contracted research.
2010 (summer)	Morehead Planetarium and Science Center, Chapel Hill, NC. Counselor – Summer Science Camps. Taught curricula in astronomy and physics to elementary and middle school students.

2009 (summer)	The Motley Fool, Washington, DC.
	Intern – CAPS Department. Developed software to track returns for quantitative hedge fund. Analyzed performance of stock recommendation services.
2008 (summer)	Cross Cultural Solutions, Cape Town, South Africa.
	Teaching Assistant. Taught lessons in mathematics, biology, and politics to seventh-grade students.
2006 – 2007	Enka High School, Candler, NC.
	Tutor. Peer tutor and technical assistant for the computer lab.

Honors and Awards

BA with Highest Honors and Distinction
Morehead-Cain Scholar
Phi Beta Kappa
Dean's List—7 of 8 undergraduate semesters

Technical Skills

Most experienced – R, Stan, Excel
Some experience – Bash, Python
Used in the past – Stata, Visual Basic for Applications

Peer-Reviewed Publications

Crouse W, Kelada S, Valdar W. "Inferring the Allelic Series at QTL in Multiparental Populations." *Genetics* (in press): https://doi.org/10.1534/genetics.120.303393

Tovar A, Smith G, Thomas J, **Crouse W**, Harkema J, Kelada S. "Transcriptional Profiling of the Murine Airway Response to Acute Ozone Exposure." *Toxicological Sciences* 173:1 (2020): 114-130.

Keele G*, **Crouse W***, Kelada S, Valdar W. "Determinants of QTL Mapping Power in the Realized Collaborative Cross." *G3* 9.5 (2019): 1707-1727.

Subramanian S, Tangka F, Ekwueme D, Trogdon J, **Crouse W**, Royalty J. "Explaining Variation Across Grantees in Breast and Cervical Cancer Screening Proportions in the NBCCEDP." *Cancer Causes and Control* 26.5 (2015): 689-95.

Hoerger T, **Crouse W**, Zhuo X, Gregg E, Albright A, Zhang P. (2015): "Medicare's Intensive Behavioral Therapy for Obesity: An Exploratory Cost-Effectiveness Analysis." *American Journal of Preventive Medicine* 48.4 (2015): 419-25.

Ekwueme D, Subramanian S, Trogdon J, Miller J, Royalty J, Li C, Tangka F, Guy G, **Crouse W**, Thompson H, Gardner J. “Cost of Services Provided by the National Breast and Cervical Cancer Early Detection Program.” *Cancer* 120.S16 (2014): 2604-611.

Trogdon J, Ekwueme D, Subramanian S, **Crouse W**. “Economies of Scale in Federally-Funded State-Organized Public Health Programs: Results from the National Breast and Cervical Cancer Early Detection Program.” *Health Care Management Science* 17.4 (2013): 321-30.

Wittenborn J, Zhang X, Feagan C, **Crouse W**, Shrestha S, Kemper A, Hoerger T, Saaddine J. "The Economic Burden of Vision Loss and Eye Disorders among the United States Population Younger than 40 Years." *Ophthalmology* 120.9 (2013): 1728-735.

Presentations

Crouse W, Kelada S, Valdar W. (2019, February): “Tree-Based Inference of Multiallelism via Bayesian Regression.” Oral presentation at the Gordon Research Seminar and Conference on Quantitative Genetics and Genomics in Lucca, Italy.

Crouse W, Kelada S, Valdar W. (2018, May): “Tree-Based Inference of Multiallelism via Bayesian Regression.” Poster presentation at the Population, Evolutionary and Quantitative Genetics Conference in Madison, WI.

Crouse W, Kelada S, Valdar W. (2017, June): “Tree-Based Inference of Multiallelism via Bayesian Regression.” Oral presentation at the Complex Trait Community Meeting in Memphis, TN.

Crouse W, Kelada S, Valdar W. (2017, February): “Tree-Based Inference of Multiallelism via Bayesian Regression.” Poster presentation at the Gordon Research Seminar and Conference on Quantitative Genetics and Genomics in Galveston, TX.

Crouse W, Kelada S, Valdar W. (2016, June): “Bayesian Inference of the Allelic Series at Quantitative Trait Loci in Multiparent Populations.” Poster presentation at the International Conference on Quantitative Genetics 5 in Madison WI.

Crouse W, Valdar W, Kelada S. (2015, June): “Efficient Detection of Trans-eQTL in Incipient Lines of the Collaborative Cross.” Poster presentation at the Complex Trait Community Meeting in Portland, OR.

Crouse W, Valdar W, Kelada S. (2015, March): “Efficient Detection of Trans-eQTL in Incipient Lines of the Collaborative Cross.” Poster presentation at the Population-Based Rodent Resources for Environmental Health Sciences Meeting in Durham, NC.

Other Works

Crouse W. (2011): “Victim Identification and Dishonest Behavior.” Unpublished honors thesis, University of North Carolina at Chapel Hill.

Research Support

T32 ES007126 05/15/2020 – Present
Pre- and Postdoctoral Training in Toxicology

T32 GM067553 08/01/2015 – 04/30/2015 9.0 calendar months
Predoctoral Training Program in Bioinformatics and Computational Biology

Professional Service

2007 - 2011 Campus Y, University of North Carolina at Chapel Hill, Chapel Hill, NC.

Director of Programming, Special Projects Coordinator, First-Year Member at Large. Largest social justice organization on UNC campus. Assessed new project applications for the Campus Y umbrella. Overhauled process for new project applications. Provided feedback and capacity building for existing projects.