

## 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, 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, 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.
- 2009 (Summer)                      The Motley Fool, Washington, D.C.
- Intern – CAPS Department. Developed software to track returns for  
quantitative hedge fund. Analyzed performance of stock recommendation  
services.

## Teaching Experience

- 2015, 2017 (Summer)     How to Learn to Code, University of North Carolina at Chapel Hill, NC.
- Instructor – “Introduction to R.” Student-organized course for graduate students without prior programming experience. Lectured and developed curriculum.
- 2015 (Fall)                     Curriculum in Bioinformatics and Computational Biology, University of North Carolina at Chapel Hill, NC.
- Teaching Assistant – “BCB 720 Introduction to Statistical Modeling.” Required course for BCB graduate students. Held office hours, graded assignments, and lectured.
- 2010 (Summer)                Morehead Planetarium and Science Center, Chapel Hill, NC.
- Counselor – Summer Science Camps. Led elementary and middle school students through experiential learning curricula in astronomy and physics.

## 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, VBA

## Peer-Reviewed Publications

- Crouse W**, Kelada S, Valdar W (2020) Inferring the Allelic Series at QTL in Multiparental Populations. *Genetics* 216(4): 957-983. <https://doi.org/10.1534/genetics.120.303393>.
- Selected by editors for highlight in December 2020 issue
- Tovar A, Smith G, Thomas J, **Crouse W**, Harkema J, Kelada S (2020) Transcriptional Profiling of the Murine Airway Response to Acute Ozone Exposure. *Toxicological Sciences* 173(1): 114-130. <https://doi.org/10.1093/toxsci/kfz219>

- Keele G\*, **Crouse W\***, Kelada S, Valdar W (2019) Determinants of QTL Mapping Power in the Realized Collaborative Cross. *G3: Genes, Genomes, Genetics* 9(5): 1707-1727. <https://doi.org/10.1534/g3.119.400194>
- Subramanian S, Tangka F, Ekwueme D, Trogdon J, **Crouse W**, Royalty J (2015) Explaining Variation Across Grantees in Breast and Cervical Cancer Screening Proportions in the NBCCEDP. *Cancer Causes and Control* 26(5): 689-95. <https://doi.org/10.1007/s10552-015-0569-5>
- 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): 419-25. <https://doi.org/10.1016/j.amepre.2014.11.008>
- Ekwueme D, Subramanian S, Trogdon J, Miller J, Royalty J, Li C, Tangka F, Guy G, **Crouse W**, Thompson H, Gardner J (2014) Cost of Services Provided by the National Breast and Cervical Cancer Early Detection Program. *Cancer* 120(S16): 2604-611. <https://doi.org/10.1002/ncr.28816>
- Trogdon J, Ekwueme D, Subramanian S, **Crouse W** (2013) 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): 321-30. <https://doi.org/10.1007/s10729-013-9261-z>
- Wittenborn J, Zhang X, Feagan C, **Crouse W**, Shrestha S, Kemper A, Hoerger T, Saaddine J (2013) The Economic Burden of Vision Loss and Eye Disorders among the United States Population Younger than 40 Years. *Ophthalmology* 120(9): 1728-735. <https://doi.org/10.1016/j.ophttha.2013.01.068>

## 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.