

Deidra A. Coleman

CONTACT INFORMATION

North Carolina State University
Department of Statistics
Campus Box 8203
Raleigh, NC 27695

Phone: (919) 515-0621
Email: dacolem2@ncsu.edu
Webpage: www4.ncsu.edu/~dacolem2

RESEARCH INTERESTS

Distributions of Run, Pattern, and Scan Statistics

EDUCATION

Ph.D., Statistics, North Carolina State University, May 2011 (Expected).

Masters of Statistics, North Carolina State University, May 2006.

B.S., Mathematics (*Summa Cum Laude*), Shaw University, December 2003. GPA: 3.97/4.0.

RESEARCH EXPERIENCE

Research Assistant, Department of Statistics, NC State University, Raleigh, NC, 2008

- Developed the first Matlab program to utilize the unified approach created by Martin and Aston (2008) to compute the distributions associated with hidden state sequences.
- Conducted an extensive literature review of clump statistics leading to the identification of an open problem and began the development of the only Matlab program to compute distributions of statistics associated with word clumps.

Summer Graduate Intern, Education and Workforce Research Services, ACT, Iowa City, IA, 2006

- Conducted a comprehensive survey of the literature on factors associated with college attainment leading to the assessment that high school extracurricular activity participation as a factor associated with college attainment had been under studied.
- Identified relevant data sources for studying the association between high school extracurricular activities and college attainment. Established a criterion for the categorization of types of extracurricular activities to narrow the scope of the research while conducting an informative investigation.
- Developed over 50 variables for analysis with SAS data steps in UNIX from four data sets with greater than 1,000 records each to investigate the association between college attainment and high school extracurricular activities. Used Base SAS procedures such as Freq, Means, Corr, Sort, Transpose in UNIX to perform quality control analysis on the variables created for analysis.
- Analyzed the data using procedures in SAS STAT and presented the findings of this study at an ACT research showcase.

Research Assistant, Center for Biostatistics and Data Management, Institute for Health, Social, and Community Research, Shaw University, Raleigh, NC, 2004 - 2006

- Developed, validated, and documented SAS macros creating a SAS macro library to improve the efficiency of completing requested data analyses.
- Enhanced Access database to make the double data entry process of over 100 surveys more efficient using Visual Basic for Applications (VBA) and created documentation for implementation of new technique.
- Developed over 500 variables for analysis with SAS data steps in Windows for over 10 data sets with greater than 10,000 records each. Used Base SAS procedures such as Freq, Means,

Corr, Sort, Transpose in Windows to perform quality control analysis on over 500 variables created for analysis.

- Co-presented a talk on the impact of student involvement in the biostatistical and data management component of the research conducted at the Institute for Health, Social, and Community Research.

PUBLICATIONS

Coleman, D.A. and Martin, D.E.K. (2010) Distribution of the Multiple Window Scan Statistics in Higher-Order Discrete State Markovian Sequences, In Preparation.

Martin, D.E.K. and **Coleman, D.A.** (2010) Distribution of Statistics of h -gap clusters for a Collection of Words, In Preparation.

Martin, D.E.K. and **Coleman, D.A.** (2010) Distribution of Clump Statistics for a Collection of Words, Submitted to *Journal of Applied Probability*.

Martin, D.E.K. and **Coleman, D.A.** (2009) Distribution of Clump Statistics for a Collection of Words. *2009 Proceedings of the American Statistical Association, Statistical Computing Section, Alexandria, VA: American Statistical Association, 2577–2591.*

Coleman, D.A., Dugan, C., McEwen, R., Reiter, C., and Tang, T. (2006) Periods of (Q, R) -Fibonacci Sequences and Elliptic Curves. *The Fibonacci Quarterly* 44, 59–70.

PRESENTATIONS

Distribution of Statistics of h -gap Clusters for a Collection of Words, Joint Statistical Meetings, Vancouver, BC, Canada, August 2010.

Multiple Window Scan Statistic. Career Mentoring Workshop, The United States Military Academy, West Point, NY, July 2010.

Distribution of Multiple Window Scan Statistic. Enhancing Diversity in Graduate Education NC Cluster meeting, NC State University, Raleigh, NC, April 2010.

Graduate School Panel. Panelist, Shaw University, Raleigh, NC, January 2010.

Distribution of Clump Statistics for a Collection of Words. Departmental Seminar, NC State University, Raleigh, NC, September 2009.

Distribution of Clump Statistics for a Collection of Words. Joint Statistical Meetings (JSM), Washington, D.C., August 2009.

Quantile Regression: A Developmental Overview. Enhancing Diversity in Graduate Education NC Cluster meeting, NC State University, Raleigh, NC, September 2008.

Benefits of Undergraduate Research and Internship Opportunities. Infinite Possibilities Conferences, NC State University, Raleigh, NC, November 2007.

Student Research Experiences. Institute for Health, Social, and Community Research Showcase Conference, Raleigh, NC, September 2006.

Exploring the Relationship between Extracurricular Activities and College Attainment. Education and Workforce Services, ACT, Iowa City, IA, July 2006.

Enhancing Diversity in Graduate Education. Panelist, NC Agriculture and Technical University, Greensboro, NC, July 2005.

TEACHING
EXPERIENCE

Frederick Douglas Teaching Scholar, Department of Mathematics, Indiana University of Pennsylvania, Indiana, PA, 2009

- Co-taught Probability & Statistics, an introductory level Statistics course of 31 students, with special emphasis on critical thinking and making informed decisions using statistics.
- Developed and delivered four interactive 95 minute course lectures per week. Provided weekly office hours so that students could receive additional one-on-one assistance. Developed and administered exams focusing on the evaluation of learning objectives.

Teaching Assistant, Department of Statistics, NC State University, Raleigh, NC, 2009

- Graded homework assignments for Introduction to Survey Sampling, a senior level undergraduate Statistics course of 21 students, and Applied Longitudinal Analysis, a graduate level Statistics course of 25 students, with special emphasis on developmental feedback.
- Provided four office hours weekly for 16 weeks so that students could receive additional assistance for Introduction to Survey Sampling and Applied Longitudinal Data Analysis.

Teaching Assistant, Department of Statistics, NC State University, Raleigh, NC, 2007 - 2008

- Taught Introduction to Statistics course to 65 students each semester with emphasis on connecting the concepts of the course to each other to demonstrate the overall benefit of the statistical sciences.
- Developed and delivered two 75 minute course lectures per week with the inclusion of hands-on activities and an introductory level statistical software package.
- Developed and administered exams focusing on the evaluation of learning objectives provided to students at the beginning of course and revisited as appropriate prior to and following in class coverage. Evaluated exams with special emphasis on developmental feedback.
- Provided two office hours weekly for students to receive additional assistance focusing on critical thinking.

CONSULTING
EXPERIENCE

Consultant, General Education Department, Morehouse College, Atlanta, GA, 2007 - 2009

- Operationalized definitions of proficiency based on statistical criterion. Recommended and setup software for more efficient data management. Provided graphical summaries of the results of various assessments.

HONORS AND
AWARDS

- NASA-Harriet G. Jenkins Predoctoral Fellow, 2009 - 2010
- Diversity Enhancement Grant, 2004 - 2010
- Cavell Brownie Scholar, 2010
- Selected Participant Career Mentoring Workshop (CaMeW), 2010
- Pharmaceutical SAS Users Group (PharmaSUG) Student Scholar, 2010
- Infinite Possibilities Conference (IPC) Student Travel Award, 2010
- Eastern North American Region (ENAR) International Biometric Society Diversity Workshop Travel Award, 2009, 2010
- Selected Participant CALS Graduate Student Professional Development Workshop, 2009
- Mathematical Sciences Research Institute (MSRI) Funding Award, 2008
- Statistical and Applied Mathematical Sciences Institute (SAMSI) Graduate Fellow, 2008
- Virtual Integration of Research and Education in the Mathematical Sciences (VIGRE) Fellow, 2004 - 2008

- NC State University Leadership and Achievement Award, 2003

SKILLS Matlab Programming, L^AT_EX, Base SAS, SAS Stat, R, C++, Microsoft Office Suite

PROFESSIONAL American Statistical Association (ASA)
MEMBERSHIPS AND International Biometric Society, Eastern North American Region (ENAR)
ACTIVITIES Institute of Mathematical Statistics (IMS)