

Erin J. Moore

CONTACT INFORMATION	51 England Rd. Morgantown, WV, 26508	(304)642-6625 EJMooreCpe@gmail.com
RESEARCH INTERESTS	Data Mining/Machine Learning: unsupervised, semi-supervised learning, applications of data mining to biomedical problems in Computational Biology, Systems Biology, and 'Omics	
EDUCATION	West Virginia University Ph.D. Candidate, Computer Engineering (expected May 2015) <ul style="list-style-type: none">• Advisors: Dr. Peter M. Gannett, Dr. Thirimachos Bourlai• Research: Data Mining and Computational Biology - Search for DNA Aptamers• Passed Qualifying Exam, Fall 2013 University of Arizona M.E. in Engineering, Specialty - Systems Engineering, May 2006 <ul style="list-style-type: none">• Advisor: Dr. Terry Bahill• Project: Sensitivity Analysis of Baseball Bat Chooser System West Virginia University B.S. in Computer Engineering, May 1999 <ul style="list-style-type: none">• Presidential Scholarship• Member of WVU Marching Band	
HONORS AND AWARDS	2013-2014 2013 2013 2012	WV NanoSAFE Fellowship , NSF EPSCoR NSF EPSCoR Scientist Idol , Team Finalist Featured Nanoscience Graduate Student , <i>WV Nanooze</i> , produced by WV Higher Education Policy Commission, the National Nanotechnology Infrastructure Network, and Cornell NanoScale Science & Technology Facility WV EPSCoR STEM Cancer, Energy, and Security Nanotechnology Fellowship , NSF EPSCoR
SELECTED PRESENTATIONS	Nov. 2013 May 2013	<i>A Combinatory Experimental-Computational Approach to the Development of DNA Aptamer Biosensors</i> . Katherine Hickey, Erin Moore, Robyn Ayscue, Peter Gannett and Tim Menzies. NSF EPSCoR, Poster, Nashville, TN <i>A Parallel Experimental-Computational Approach to the Development of Aptamer Based Biosensors</i> . Katherine Hickey, Robyn Ayscue, Erin Moore, Peter Gannett and Tim Menzies. WVU School of Pharmacy, AAPS Regional Meeting & Research Forum, Poster, WVU
TEACHING EXPERIENCE	Spring 2013 Fall 2011 Fall 2011	<i>Classroom Lecture</i> , Fundamentals of Programming Languages History and Application of Abstract Data Types <i>Classroom Lecture</i> , Introduction to Java Programming Recursion and Multi-Dimensional Arrays <i>Teaching Assistant</i> , Introduction to Java Programming Lectured for weekly laboratory, developed lectures and quizzes

SCIENTIFIC
RESEARCH
EXPERIENCE

Spring 2012– Present *DNA Aptamer Discovery through Data Mining.*

DNA aptamers are short DNA strands that bind strongly and specifically to a target molecule. Aptamers are used in nanosensors, medical diagnostics, and targeted medicines. The ultimate goal of our research is to design virtual screening for aptamers; greatly reducing the time and cost needed to develop these molecules, allowing new drugs and biosensors to become a reality.

Given ssDNA sequences and structural information, I have developed an algorithm using bash and awk, that finds related groups of DNA 4-mers, bi-clusters. This algorithm provides a mechanism to reason over an exemplar database of DNA aptamers and DNA aptamer experiments.

The algorithm is applicable to large, noisy, binary databases, where it produces statistically relevant groupings, and is efficient enough to run on a personal computer. A journal paper for this algorithm is under construction. A streaming bi-clustering algorithm is under development.

OTHER
PROFESSIONAL
EXPERIENCE

2/09–7/09 *Professional Technologist 4*

West Virginia University, Morgantown, WV

Maintained and created software for university operations.

11/05–01/09 *Software Systems Engineer*

Information Research Corp., Fairmont, WV

Maintained, updated, specified, and developed governmental 24-7 software.
Received peer-nominated award for work updating software to Java 5 compliance.

02/02–11/05 *Computer Engineer*

Electronic Warfare Associates, Fairmont, WV

Developer, and team lead for full life-cycle of multiple simulation software products.

01/01–01/02 *Systems Engineer*

Virtual Technology Corp. (now Raytheon), Alexandria, VA

Trained and tested enhancements for Rapid prototyping Joint C4I Software System.

Provided training and operation support for multi-nation military exercise.

07/99–12/00 *Software Engineer*

Raytheon Missile Systems, Tucson, AZ

Developed real-time embedded telemetry code in a CMMI 3 environment.

Trained in Guided Missile Design.

RELEVANT
SKILLS

Software: Awk, bash, Java, c, C++, Matlab, Gnuplot, UML, Linux/Unix, Weka

REFERENCES

Dr. Peter M. Gannett, School of Pharmacy, Department of Basic Pharmaceutical Sciences, West Virginia University, (304)293-1480, pgannett@hsc.wvu.edu

Dr. Hany H. Ammar, Benjamin M. Statler College of Engineering and Mineral Resources, Lane Department of Computer Science and Electrical Engineering, West Virginia University, (304)293-9682, hany.ammar@mail.wvu.edu