

George S. Butler III

Contact Information

University of Tennessee at Knoxville
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Education

M.S. in Mathematics University of Tennessee, 2005.
Committee: Ken Stephenson and Charles Collins.
Master's Project: *A New Layout Algorithm For Circle Packings.*

B.S. in Mathematics and University of Tennessee, 2002, Summa Cum Laude.
Computer Science

Interests

Climate Modeling
Parallel Programming
High-Performance Computing
Coding Theory
Cryptography
Brain Mapping
Origami

Employment

Graduate Teaching Associate	University of Tennessee, 2006-present Department of Mathematics
Graduate Teaching Assistant	University of Tennessee, 2002-2006 Department of Mathematics
Graduate Research Assistant	University of Tennessee, Summer 2002 and December 2003 Department of Mathematics Supervised under Ken Stephenson
Undergraduate Teaching Assistant	University of Tennessee, Fall 2000 Department of Computer Science

Research

Presentations

Master's Defense, University of Tennessee, Knoxville, TN. December 2004. *A Block-Oriented Layout Algorithm for Circle Packings.*

Algebra Seminar, University of Tennessee, Knoxville, TN. October 2005. *Codes Associated to Algebraic Curves.*

Algebra Seminar, University of Tennessee, Knoxville, TN. November 2005. *Bounds on Error-Correcting Codes.*

Oral Specialty Examination, University of Tennessee, Knoxville, TN. March 2007. *Properties of Enumeration in the Theory of Modular Systems, with an Application to Coding Theory.*

Software Development

Package Name	Description	Role and Time Period
CirclePack	Software package for generating flat mapping of 3D surfaces, including brain mapping.	Created scripts to partially automate the process of splitting apart the library routines into separate libraries for core routines and the GUI, in preparation for the Java implementation of the GUI and the Windows port (Summer 2002). Ported the software to Microsoft Windows (December 2003).
Mpipack	MPI implementation of CirclePacking in C.	Continued the development of the software initially written by Joel Mejeur; implemented MPI versions of the CirclePacking library routines (2003-2004).
FixParallel	Enhanced the parallelization of CirclePacking by applying the Conjugate Gradient algorithm to merge independently packed subpackings.	Author (2004).
GHWCalculator	Assorted python scripts used with the Sage mathematics software to calculate Generalized Hamming Weights of Projective q-ary Reed-Muller codes in order to provide numerical evidence for several conjectures relating to the computation of the weights.	Author (March 2009).

Technical Experience

Programming Languages: C, C++, Fortran, Perl, Python

Mathematical Software: Maple, Matlab, Sage

Markup Languages: HTML, L^AT_EX

Development Platforms: Linux, Microsoft Windows

Software Libraries: MPI, Pthreads, Metis, Eclipse

Teaching Experience

The University of Tennessee, Knoxville, TN

Course	Title	Semesters Taught
Math 115	Statistical Reasoning	Fall 2004
Math 125	Basic Calculus	Fall 2003, Spring 2004, Spring 2005, Summer 2006, Summer 2007, Summer 2008, Spring 2010
Math 130	Precalculus	Fall 2005, Fall 2006, Spring 2008
Math 141	Calculus I	Spring 2006, Spring 2007, Fall 2008, Summer 2009, Fall 2009
Math 142	Calculus II	Spring 2009
Math 151	Mathematics for the Life Sciences	Spring 2007
Math 171	Computer Literacy for Mathematics	Spring 2005

Conferences and Workshops Attended

Conference: Conformal Geometry of Surfaces: Theory, Computation, Application, May 18-20, 2003

NPACI Summer Computing Institute, San Diego Supercomputer Center, August 18-22, 2003

Honors, Awards, and Professional Organizations

Graduate Student Achievement Award, 2004

Golden Key Honor Society

Phi Beta Kappa Honor Society

Member, American Mathematical Society (2002-Present)

Member, Society for Industrial and Applied Mathematics (2005-Present)

References

Name	Institution	Contact Information
David F. Anderson	Department of Mathematics University of Tennessee Knoxville, TN 37996-0614	Email: anderson@math.utk.edu Phone: (865)-974-4298 Fax: (865)-974-6576
Barbara G. Beckerman	Computational Sciences and Engineering Division Oak Ridge National Laboratory Oak Ridge, Tennessee 37830	Email: beckermanbg@ornl.gov Phone: (865)-576-2681 Fax: (865)-241-3191
Martin Beckerman	Business Services Division Y-12 National Security Complex Oak Ridge, Tennessee 37830	Email: beckermanm@y12.doe.gov Phone: (865)-574-7514
James Conant	Department of Mathematics University of Tennessee Knoxville, TN 37996-0614	Email: jconant@math.utk.edu Phone: (865)-974-4299
S. Mulay	Department of Mathematics University of Tennessee Knoxville, TN 37996-0614	Email: mulay@math.utk.edu Phone: (865)-974-4296
Ken Stephenson	Department of Mathematics University of Tennessee Knoxville, TN 37996-0614	Email: kens@math.utk.edu Phone: (865)-974-4330 Fax: (865)-974-6576

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<http://www.math.utk.edu/~gbutler/cv.pdf>