

WILLIAM WOOD

575 5th Ave., Apt. D-2
Conway, AR 72032

phone: (319) 400-6596
email: wood@hendrix.edu

EDUCATION

Florida State University

PhD Mathematics, Tallahassee, FL, 2006

- Doctoral Dissertation: “Combinatorial Type Problems for Triangulation Graphs”

University of California, San Diego

MA Mathematics, La Jolla, CA, 1998

New College

BA Mathematics/Computer Science, Sarasota, FL, 1996

- Thesis: “Certain Representations of Pretzel Knots in $SO(3)$ ”

PUBLICATIONS

- “A Stochastic Approach to Estimating Extreme Discrepancy,” in preparation (*M. Shah and W. E. Wood*)
- “Bounded Outdegree and Extremal Length on Discrete Riemann Surfaces,” *Conformal Geometry and Dynamics*, submitted (*W. E. Wood*)
- “Introducing Geometry with Spatial Scan Statistics,” *DIMACS Educational Module Series*, submitted (*J. Franko, R. Schwell, W. E. Wood*)
- “Squigonometry,” *Mathematics Magazine*, submitted (*W. E. Wood*)
- “Combinatorial Modulus and Type of Graphs,” *Topology and its Applications*, Vol. 156, Issue 17, pp. 2747—2761, 2009 (*W. E. Wood*)
- “Evaluation of Three Cortical Surface Flattening Methods,” *NeuroImage*, vol. 22, no. Supplement 1, pg. S45, CD-Rom Abstract WE-207, 2004 (*L. Ju, M. K. Hurdal, K. Rehm, B. Wood, K. Schaper, J. Stern, D. Rottenberg, refereed poster and abstract*)

TEACHING EXPERIENCE

Visiting Assistant Professor

Hendrix College, Conway, AR, 2007 - Present

New course/independent study:

Differential Topology (independent study, exp. Spring 2010)

Discrete Geometry (Fall 2008)

Full responsibility:

Abstract Algebra (Fall 2007)

Complex Analysis (Spring 2009)

Discrete Mathematics (Fall 2007, Fall 2008, Fall 2009)

Linear Algebra (Spring 2009)

Multivariable Calculus (Spring 2008)

Probability and Statistics (Fall 2009)

Department curriculum:

Calculus I (Fall 2007, Fall 2008)

Calculus II (Spring 2008, Spring 2009, Spring 2010)

Mathematics in Contemporary Issues (Spring 2008, Fall 2009, Spring 2010 (×2))

Senior research and capstone projects:

William Longley, *Constructions of Fractals of Specified Dimension* (exp. May 2010)

Don Bennett, *Four-Dimensional Tetris* (Dec 2008)

Henry Phillips, *Effective Resistance of Degree Six Electric Networks* (May 2008)

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Visiting Assistant Professor

Knox College, Galesburg, IL, 2006 - 2007

Full responsibility:

Discrete Mathematics (Spring 2007)
Mathematical Ideas (Winter 2007)

Department curriculum:

Functions and Calculus I (Fall 2006)
Functions and Calculus II (Winter 2007, Spring 2007)
Vector Calculus (Fall 2006)

Graduate Instructor

Florida State University, Tallahassee, FL, 2003 - 2006

Department curriculum:

Calculus I (Fall 2004, Fall 2005)
Calculus III (Spring 2006)
Discrete Mathematics I (Summer 2006)

Coordinated:

Pre-Calculus (Fall 2003 (×2), Spring 2004)

Graduate Teaching Assistant

University of California at San Diego, La Jolla, CA, 1996 - 1998

Business Calculus, Calculus I-III

Teaching Assistant

New College, Sarasota, FL, 1992 - 1996

Calculus I-II, Linear Algebra, Abstract Algebra

INDUSTRIAL EXPERIENCE

Senior Research Analyst (part time, summer only)

Computer Sciences Corporation, Conway, AR, 2008

- Research task using mathematical methods on available systems and data sources to quantify military readiness
- Developed approach for defining a figure of merit meeting specific sensitivity constraints

Senior Analyst

Computer Sciences Corporation, Arlington, VA, 2000 - 2001

- Management and development of personnel planning systems for the U. S. Navy
- Mathematical modeling and data analysis toward planning future personnel needs
- Requirements analysis, system design, documentation, and on-site client and technical support
- Development in Visual Basic with ActiveX controls in third-party software

Quality Assurance Engineer

Wolfram Research, Champaign, IL, 1999 - 2000

- Software quality assurance for Mathematica
- Kernel test design and implementation
- Coding in Mathematica with some Perl scripting and manipulation of the C/C++ kernel code

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Systems Analyst

DynMeridian (n.k.a. Computer Sciences Corporation), Arlington, VA, 1998 - 1999

- Development and support of personnel planning systems for the U. S. Navy
- Y2K testing and repair of legacy systems

Programmer

PMR, Inc., Sarasota, FL, 1994 - 1996

- Wrote a Visual Basic front end and assisted in programming a simulation of an industrial network of railroads
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RESEARCH ASSISTANTSHIPS

Graduate Research Assistant

Florida State University, Tallahassee, FL, 2001 - 2004

- Worked with Dr. Monica Hurdal on an NSF grant applying circle packing methods to neuroinformatics
- Analysis and programming for software applying new mathematical research to visualization of real fMRI data

Research Experiences for Undergraduates

University of Oklahoma, Norman, OK, 1995

- “Hyperbolic 3-manifolds constructed from two regular ideal octahedra,” under Ara Basmajian

Florida State University, Tallahassee, FL, 1994

- “Automatic groups and hyperbolic geometry,” under Philip Bowers
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SKILLS

- Mathematical research and problem solving
- Project management
- Requirements analysis
- Software quality assurance
- Teaching and demonstration
- Technical and expository writing
- Programming
 - *Python/Tkinter*: Wrote circle packing software to study research questions in discrete conformal geometry, implementing numerical and combinatorial algorithms to find correct radii and centers of a circle packing and displays the resulting pattern
 - *Mathematica*: Worked as a kernel tester for Wolfram Research, the developers of Mathematica; wrote several notebooks for teaching and research applications, including extensive use of its functional programming, mathematical, graphics, and publication features
 - *Maple*: PhD qualification exam in computer algebra was taken in Maple; used Maple as my primary prototyping, graphics generation, and demonstration tool in graduate school.
 - *C*: Wrote software supporting analysis of conformal flat-mapping of the human brain
 - *Visual Basic*: Wrote VB front-ends atop third-party software
 - *Other languages*: Experience with SAS, C++, Java, HTML, Perl, and several legacy systems
- Connecticut School of Broadcasting, 2001

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PROFESSIONAL ACTIVITIES

- National Project NExT fellow, 2007 - 2008 (Sun dot)
- Member of the American Mathematical Society and the Mathematical Association of America
- MAA Basic Library List Committee, 2009 - Present
- Reviewer, MAA Online book reviews
 - *Visual Complex Analysis* by Tristan Needham
 - *Encyclopedia of Distances* by Michael Deza and Elena Deza
- Hendrix College service
 - Pi Mu Epsilon advisor, 2008 - 2010
 - Committees: Computer Science Faculty Search, Academic Appeals, Hayes Scholarship Selection
 - Freshman mathematics placement
- Director, graduate student seminar, Florida State University, 2002 - 2004
- Conferences and Workshops:
 - Joint Mathematics Meetings, 1999, 2006, 2007, 2008, 2009, 2010, Various Locations
 - MathFest, 2007, 2008, Various Locations
 - 11th Annual Legacy of R. L. Moore Conference, Austin, TX, July 2008
 - Mathematical Methods in Biosurveillance: From Basics to Breakthroughs, Homeland Security Center for Dynamic Data Analysis Workshop, Rutgers University, New Brunswick, NJ, June 2008
 - Percolation on Transitive Graphs, American Institute of Mathematics Workshop, Palo Alto, CA, May 2008
 - Emerging Technologies and the Liberal Arts Campus, NITLE Workshop, Knox College, Galesburg, IL, June 2007
 - AMS Sectional Meeting, Florida State University, Tallahassee, FL, March 2004
 - Conformal Geometry of Surfaces: Theory, Computation, Application, Townsend, TN, May 2003
 - Conference on Discrete Geometry with Applications to Science and Medicine, Wakulla Springs, FL, May 2002
 - e-gov Knowledge Management Conference, Washington, D. C., July 2001

SELECTED PRESENTATIONS & SEMINARS

- "A Project-Oriented Undergraduate Course in Discrete Geometry," MAA Contributed Session, Joint Mathematics Meetings, Washington, D.C., January 2009
- "A Discrete Invitation to the Complex Plane," invited talk, Hendrix College, Conway, AR, April, 2007
- "A Discrete Invitation to the Complex Plane," invited talk, Grand Valley State University, Allendale, MI, March, 2007
- "Circle Packing and the Discrete Type Problem," invited talk, Knox College, Galesburg, IL, March, 2006
- "Hexagonal Refinement Preserves Combinatorial Type," AMS Contributed Session on Geometry: Convex, Discrete, Differential, Joint Mathematics Meetings, San Antonio, TX, January, 2006
- "Hexagonal Refinement Preserves Combinatorial Type," invited talk, University of Tennessee, Knoxville, TN, May, 2005
- "The Combinatorial Type Problem," lecture series, Topology Seminar, Florida State University, Tallahassee, FL, Fall 2006
- "Quasiconformal Mappings of the Plane," lecture series, Geometry Seminar, Florida State University, Tallahassee, FL, Fall 2004
- "Discrete Differential Geometry," lecture series, Geometry Seminar, Florida State University, Tallahassee, FL, Spring 2004
- "Random Walks and Electric Networks," Graduate Student Seminar, Florida State University, Tallahassee, FL, Fall 2003
- "The Gamma Function and the Volumes of Hyperspheres," Graduate Student Seminar, Florida State University, Tallahassee, FL, Spring 2003
- "How to Fix Your Favorite Team: Sabermetrics and the Mathematics of Baseball," Graduate Student Seminar, Florida State University, Tallahassee, FL, Spring 2002
- "Orbifold Notation for Wallpaper Groups," Biomedical Mathematics Seminar, Florida State University, Fall 2001