Jeffrey Braidon Hood

Curriculum Vitae

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EDUCATION

Ph.D. Computational Mathematics	North Carolina State University	2005
M.S. Applied Mathematics	Texas Tech University	2002
B.S. Mathematics	Texas Tech University	2000

TEACHING EXPERIENCE

Intermediate Algebra	Introduction to Modern Mathematics
Contemporary Mathematics	Calculus III (Vector Calculus)
Mathematical Analysis for Business	Math for Thermodynamics
College Algebra	Foundations of Geometry
Plane Trigonometry	Differential Equations
Pre-Calculus	Probability and Statistics
Business Calculus	Numerical Analysis
Calculus I (Differential Calculus)	Linear Algebra
Calculus II (Integral Calculus)	Operations Research

PUBLICATIONS

D. Gupta, T. Hinchman, A. Manuel, M. Lopez, & J. Hood, "Play-Based Learning Through Think & Learn Code-a-Pillar Twist^{TM}," Texas Mathematics Teacher, LXX (2), 16-18, Fall/Winter 2024

M. Bethel, Y. Guo, J.B. Hood, A. Sandstedt, "Spacial Stabilization Using Controlled Magnetic Fields," Proceedings of ASME 2024 International Mechanical Engineering Congress Exposition, Portland, OR, November 2024

S. Cobb and J.B. Hood, "Mathematical Arguments in Favor of Risk in Andy Weir's the Martian," Journal of Humanistic Mathematics, Vol. 8, Issue 1, January 2018, pages 94-107.

K. Shrum, J. Hood, D. Rankin, "Data Acquisition for, and Analysis of, Word Frequencies in the English Languages," Proceedings of the 2016 International Conference on Computational Science and Computational Intelligence, December 2016.

Illustrations for "Nonlinear Optimal Control Theory," by L.D. Berkovitz and N.G. Medhin, CRC Press 2013.

S. Tomeï, J. Hood, C. Stringfellow, "Approximating Discrete Closed Curves using Cubic Curves," Proceedings of the International Society for Computers and their Applications 26th International Conference on Computer Applications in Industry and Engineering (ISCA CAINE), Los Angeles, California, USA, September 2013.

C. Stringfellow, R. Simpson, J.B. Hood, K. Enloe, Rr. Krasniqi, T. Ngo, and R. Keown, "Solving the T-joint problem in reconstructing 2-D objects," Proceedings of the International Conference on Imaging Theory and Applications, Angers, France, May 2010.

H.T. Banks, J.B. Hood, N.G. Medhin, J.R. Samuels, "A stick-slip/Rouse hybrid model for viscoelasticity in polymers," Nonlinear Analysis: Real World Applications, Volume 9, Issue 5, December 2008, pages 2128-2149.

H.T. Banks, J.B. Hood, N.G. Medhin, "A molecular based model for polymer viscoelasticity: Intra- and inter-molecular variability," Applied Mathematical Modeling, Volume 32, Issue 12, December 2008, pages 2753-2767.

C. Stringfellow, R. Simpson, H. Bui, Y. Peng, J.B. Hood, "Matching 2D Fragments of Objects," Proceedings of the 2008 Computers and Their Applications in Industry and Engineering (CAINE 2008), November 2008.

J.A. Staples, J.B. Hood, "Deparametrization of a Discrete Convex Corner Detection Algorithm," Proceedings of the 2008 Computers and Their Applications in Industry and Engineering (CAINE 2008), November 2008.

J.B. Hood, Y. Peng, D. Sims, "Locating Convex Corner Points on Discrete Closed Curves," Proceedings of the 2007 International Conference on Image Processing, Computer Vision, and Pattern Recognition, June 2007.

H.T. Banks, J.B. Hood, N.G. Medhin, "A Stick-slip/Rouse Hybrid Model," CRSC Technical Report CRSC-TR05-28, North Carolina State University, August 2005.

H.T. Banks, J.B. Hood, N.G. Medhin, "Molecular Based Model for Polymer Viscoelasticity: Intra-molecular Variability," CRSC Technical Report CRSC-TR04-39, North Carolina State University, December 2004.

C.I. Byrnes, D.S. Gilliam, J.B. Hood, V.I. Shubov, "An Example of Output Regulation for a Distributed Parameter System with Infinite Dimensional Exosystem," Proceedings of the 15th International Conference on the Mathematical Theory of Networks and Systems, August 2002, Notre Dame University.

C.I. Byrnes, D.S. Gilliam, J.B. Hood, V.I. Shubov, "Examples of Output Regulation for Distributed Parameter Systems with Infinite Dimensional Exosystem," Proceedings of the 40th IEEE CDC, December 2001, pp. 547-548.

Bortz, Guy, Holte, Hood, Kirkpatrick, Nguyen, Shimanovich, "Modeling HIV Infection Dynamics Using Delay Equations," Proceedings of the 2000 Industrial Mathematics Modeling Workshop for Graduate Students, CRSC Technical Report CRSC-TR00-24, North Carolina State University, October 2000.

PRESENTATIONS

Let's Start a Movement - Diversify!! Presentation, 22nd Annual Coyote Area Math Championship, Weatherford College, Weatherford, TX, March 2024

Tangents; The Connections We Make Presentation, MSU Last Lecture Series, Midwestern State University, Wichita Falls, TX, Oct. 2023

Learning Through Play, Presentation, North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA), November 2019.

Play! Learn! Play! Learn!, Presentation, Conference for the Advancement of Mathematics Teaching (CAMT), July 2019.

Being a Global Citizen, Student Forum, Midwestern State University, March 2019.

Connecting Disciplines Using Science Fiction, Presentation, MAA Mathfest, August 2018.

Yes! We can Code! Presentation, Texoma Regional Mathematics and Science Conference, June 2018.

God in the Numbers, Presentation, Atheism and Christ Forum, St. Benedict Orthodox Church, Wichita Falls, TX, February 2018.

Algorithms, Recipes for Science, Presentation, Science Cafe, Frank & Joe's, Wichita Falls, TX, September 2017.

Personal Discussion of Diversity, Panel Discussion, Midwestern State University Redwine Honors College Symposium, March 2017.

STE(A)M (STEM + Arts) Collaborations at Midwestern State University, Invited Lecture, Texas Christian University New Media Writing Studio, April 2016.

Discussions of the Theme of Love *in Orson Scott Card's* Ender's Game, Invited Class Lecture, Midwestern State University Department of English, November 2014 & April 2015.

An Introduction to MatLab Programming for Engineers, Midwestern State University Department of Engineering, October 2013.

An Introduction to Linear Algebra for Engineers, Midwestern State University Department of Engineering, October 2013.

Approximating Discrete Closed Curves using Cubic Curves, International Society for Computers and their Applications 26th International Conference on Computer Applications in Industry and Engineering (ISCA CAINE), September 2013.

An Introduction to MatLab and Numerical Computation Systems, 2013 UGROW Program, Midwestern State University, June 2013.

An Introduction to Numerical Computation Systems, 2012 UGROW Program, Midwestern State University, June 2012.

UGROW as a Model for Undergraduate Research in a COPLAC Institution, 2011-2012 Faculty Forum, Midwestern State University, February 2012.

An Introduction to MatLab, 2011 UGROW Program, Midwestern State University, June 2011.

An Introduction to MatLab, 2010 UGROW Program, Midwestern State University, June 2010.

An Introduction to Inverse Problems with MatLab, 2009 UGROW Program, Midwestern State University, June 2009.

Corner Detection on 2D Discrete Closed Curves (Various Versions), College of Science and Mathematics Seminar, Midwestern State University, Fall 2008.

Predator-Prey Models and How They Work; an Elementary Approach, 2008 Texas Governors School, Midwestern State University, July 2008.

An Introduction to Inverse Problems with MatLab, 2008 UGROW Program, Midwestern State University, June 2008.

What Mathematics Can Do For You, 6th Annual Weatherford College Coyote Area Math Championship, Weatherford College, Weatherford, TX February 1, 2008.

Locating Convex Corner Points on Discrete Closed Curves, 2007 International Conference on Image Processing, Computer Vision, and Pattern Recognition, June 2007.

Matlab versus Maple, a software comparison, 2007 UGROW Program, Midwestern State University, June 2007.

Inverse Problems, Invited Seminar, Department of Mathematics and Statistics, Texas Tech University, Lubbock, TX, April 11, 2006.

The Benefits of Graduate Study, Regular Meeting of the $e^{\pi i}$ Math Club, Midwestern State University, Wichita Falls, TX, October 19, 2005.

On Computational Mathematics, Regular Meeting of the Local Chapter, Association of Computing Machinery, Midwestern State University, Wichita Falls, TX, September 6, 2005.

Molecular Based Models for Hysteresis, Journeés Jeunes, Laboratoire Jacques-Louis Lions at Universite de Paris VI, Paris, France, March 9, 2004.

Molecular-based Models for Hysteresis, US Air Force Office of Scientific Research, Brooks AFB, San Antonio, TX, November 21, 2003.

Output Regulation for a Boundary Controlled Heat Equation, 2001 Meeting of the Texas Section, Mathematical Association of America, University of Houston-Clear Lake, Houston, TX, March 30, 2001.

DIRECTED UNDERGRADUATE STUDENT RESEARCH PRESENTATIONS

Reflection of a Line Across a Differentiable Function, Emiah Carpenter, 19th Annual Texas Undergraduate Mathematics Conference (TUMC), Tyler, TX, November 2024

Spacial Stabilization Using Controlled Magnetic Fields, Miguel Bethel & Alex Sandstedt, 2024 Celebration of Scholarship, April 2024

Magnetism as a Stabilizer, Miguel Bethel, 2023 Celebration of Scholarship, April 2023

Methods of Generating Alpha from FX Trading Using Technical Analysis: Evidence from Algorithmic Simulations, Luca Lalor, 2017 Conference of the Academy of Economics and Finance, February 2017

Data Acquisition for, and Analysis of, Word Frequencies in the English Language, Kameron Shrum, 2016 International Conference on Computational Science and Computational Intelligence, December 2016

Solutions to Initial-Boundary Value Wave Equations using Separation of Variables, Eguro Makeri, Invited presentation, MWSU Department of Mathematics, May 2012

Deparametrization of a Discrete Convex Corner Detection Algorithm, J.A. Staples, Computers and Their Applications in Industry and Engineering (CAINE 2008), Honolulu, HI, November 2008

Solving and Simulating Partial Differential Equations with Maple 11, Austin Howard, Texas Oklahoma Research Undergraduate Symposium (TORUS), Cameron University, Lawton, OK, March 8, 2008

Solving Sudoku Puzzles Using Human Logic, Antonia Laurent-Goodman, Texas Oklahoma Research Undergraduate Symposium (TORUS), Cameron University, Lawton, OK, March 8, 2008

Methods of Solution for the One and Two Dimensional Heat Equation, Joel Douglas, Juan Paramo, and Carrie St. Louis, 86th Annual Meeting of the Texas Section of the Mathematical Association of America, Midwestern State University, Wichita Falls, TX, April 7, 2006

Methods of Solution for the One and Two Dimensional Heat Equation, Joel Douglas, Juan Paramo, and Carrie St. Louis, 10th Annual North Texas Area Student Conference, Midwestern State University, Wichita Falls, TX, April 8, 2006

WORKSHOPS & CONFERENCES

Assistant and Presenter Liaison, *12th Texas Oklahoma Regional Undergraduate Symposium (TORUS)*, Midwestern State University, Wichita Falls, TX, February 2018

Mentor and Workshop Presenter, *2015 Young Engineers Summer (YES) Camp Program*, Midwestern State University, Wichita Falls, TX, Summer 2015

Mentor and Workshop Presenter, *2014 Young Engineers Summer (YES) Camp Program*, Midwestern State University, Wichita Falls, TX, Summer 2014

Presenter and Participant, *International Society for Computers and their Applications 26th International Conference on Computer Applications in Industry and Engineering (ISCA CAINE)*, Los Angeles, California, USA, September 2013

Mentor and Workshop Presenter, *2013 Young Engineers Summer (YES) Camp Program*, Midwestern State University, Wichita Falls, TX, Summer 2013

Mentor and Workshop Presenter, *2012 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June–July 2012

Mentor and Workshop Presenter, *2011 Young Engineers Summer (YES) Camp Program*, Midwestern State University, Wichita Falls, TX, Summer 2011

Mentor and Workshop Presenter, *2011 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June–July 2011

Mentor and Workshop Presenter, *2010 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June–July 2010

Level II Director, *90th Annual Meeting of the Texas Section of the Mathematical Association of America*, Abilene Christian University, Abilene, TX, April 8-10, 2010

Organizations Chair, *6th Texas Oklahoma Regional Undergraduate Symposium (TORUS)*, Midwestern State University, Wichita Falls, TX, February 27, 2010

Mentor and Workshop Presenter, *2009 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June–July 2009

Workshop Presenter, *2009 Camp Beyond Program*, Midwestern State University, Wichita Falls, TX, June–July 2009

Level II Director, *89th Annual Meeting of the Texas Section of the Mathematical Association of America*, University of North Texas, Denton, TX, April 2-4, 2009

Session Chair, *Computers and Their Applications in Industry and Engineering (CAINE 2008)*, Honolulu, HI, November 2008

Faculty Instructor, *2008 MSU Texas Governor's School*, Midwestern State University, Wichita Falls, TX, July 2008

Mentor and Workshop Presenter, *2008 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June–July 2008

Level II Director, *88th Annual Meeting of the Texas Section of the Mathematical Association of America*, Tarleton State University, Stephenville, TX, April 3-5, 2008

Inductee, PKAL Class of 2007, *2007 F21 National Assembly: Leaders Developing Leaders Developing Leaders…*, Chantilly, VA, November 2-4, 2007

Presenter and Participant *2007 International Conference on Image Processing, Computer Vision, and Pattern Recognition*, Las Vegas, NV June 2007

Mentor and Workshop Presenter, *2007 Summer UGROW Program*, Midwestern State University, Wichita Falls, TX, June-July 2007

Student Volunteer Laiason and Technology Assistant, *86th Annual Meeting of the Texas Section of the Mathematical Association of America*, Midwestern State University, Wichita Falls, TX, April 6-8, 2006

Graduate Student Assistant, *2004 Industrial Mathematical and Statistical Modeling Workshop for Graduate Students*, North Carolina State University, Raleigh, NC, 2003 and 2004.

Participant, *Inverse Problem Methodology In Complex Stochastic Models, Opening Workshop*, Statistical and Applied Mathematical Sciences Institute, Research Triangle Park, NC, September 21-24, 2002.

Participant, *Texas Tech University Teaching Assistant Orientation Workshop*, Texas Tech University, Lubbock TX, Fall 2000 - Workshop to prepare new teaching assistants for rules and needs of instruction.

Participant, *2000 Industrial Mathematics Modeling Workshop for Graduate Students*, Center for Research in Scientific Computation, North Carolina State University, Raleigh, NC, July 24 to August 1, 2000.

COMMITTEES & SERVICE

Board Member, *University UMC Board of Trustees*, University United Methodist Church, Wichita Falls, TX, 2025-Present

Committee Member, *McCoy College of Science, Mathematics, and Engineering Tenure and Promotion Committee*, Midwestern State University, Wichita Falls, TX, 2024-present

Board Member, *Floral Heights UMC Legacy Foundation Board of Directors*, University United Methodist Church, Wichita Falls, TX, 2024-Present

Volunteer, *Backdoor Theater Improv Troupe*, Backdoor Theater, Wichita Falls, TX, 2018-Present

Faculty Sponsor, *Caribbean Students Organization*, Midwestern State University, Wichita Falls, TX, 2015-Present

Faculty Sponsor Π*ME Mathematics Honor Society*, Midwestern State University, Wichita Falls, TX, 2007-Present

Committee Member, *University Tenure and Promotion Committee*, Midwestern State University, Wichita Falls, TX, 2020-2024

Committee Member, *Signature Experiences Committee*, Midwestern State University, Wichita Falls, TX, 2018-2022

Coordinator and Member, *Code-a-Pillars Community Outreach Group*, Midwestern State University, Wichita Falls, TX, 2017-2019

Committee Member, *Student Conduct Committee*, Midwestern State University, Wichita Falls, TX 2011-2019

Committee Member, *Ad-hoc Faculty Grievance Committee*, Midwestern State University, Wichita Falls, TX, Summer 2018

Committee Member, *Signature Experiences Task-Force*, Midwestern State University, Wichita Falls, TX, 2017-2018

Consultant, *Oil Pump-Jack Sucker Rod Slippage*, McCoy School of Engineering, Midwestern State University, Wichita Falls, TX, 2017

Committee Chair, *COSM Faculty Research Committee*, Midwestern State University, Wichita Falls, TX, 2015-2017

Alternate, *Student Readmission Committee*, Midwestern State University, Wichita Falls, TX, 2013-2016

Committee Member, *Mathematics Department Hiring Committee*, Midwestern State University, Wichita Falls, TX 2014-2015

Committee Member, *Student Misconduct Procedures Committee*, Midwestern State University, Wichita Falls, TX, 2013

Committee Member, *Artist Lecture Series Selection Committee*, Midwestern State University, Wichita Falls, TX, 2012-2016

Participant, *Great Day of Service*, Midwestern State University, Wichita Falls, TX April 2012

Committee Member, *Dean Search Committee*, Midwestern State University, Wichita Falls, TX 2011-2012

Participant, *Great Day of Service*, Midwestern State University, Wichita Falls, TX April 2011

Committee Chair, *Faculty Forum Committee*, Midwestern State University, Wichita Falls, TX 2010-2011

Participant, *Great Day of Service*, Midwestern State University, Wichita Falls, TX April 2010

Committee Member, *Faculty Forum Committee*, Midwestern State University, Wichita Falls, TX 2009-2010

Participant, *Great Day of Service*, Midwestern State University, Wichita Falls, TX April 2009

Committee Chair, *Faculty Forum Committee*, Midwestern State University, Wichita Falls, TX 2008-2009

Participant, *Jalapeño Stompers*, Relay For Life, Wichita Falls, TX June 2008

Participant, *Great Day of Service*, Midwestern State University, Wichita Falls, TX April 2008

Level II Director, *Texas Section of the Mathematical Association of America*, 2007-2010

Committee Member, *Faculty Forum Committee*, Midwestern State University, Wichita Falls, TX 2007-2008

Participant, *Jalapeño Stompers*, Relay For Life, Wichita Falls, TX June 2007

Faculty Sponsor, $e^{\pi i}$ *Mathematics Club*, Midwestern State University, Wichita Falls, TX, 2006-2011

PROFESSIONAL AFFILIATIONS AND SOCIETIES

⬦ Mathematics Association of America - Level II Director, TX Section (2007-2010), Member 1998 - present

⬦ Pi Mu Epsilon (ΠΜΕ), Mathematics Honor Society - Chapter Advisor, Texas Tau Chapter, Midwestern State University (2008-present)

⬦ Kappa Mu Epsilon (KME), Mathematics Honor Society

⬦ Upsilon Pi Epsilon (ΥΠΕ), Computer Science Honor Society

AWARDS AND RECOGNITIONS

⬦ Faculty Award, Midwestern State University Caribbean Students Association, 2014

◇ Distinguished Lecturer, Texas Alpha Gamma Chapter of Alpha Chi, 2013

◇ Faculty Member of the Year, Midwestern State University Student Government Association, 2012-2013

◇ Faculty Member of the Year, Midwestern State University Student Government Association, 2011-2012

◇ Certificate of Completion, Intensive Language Immersion Program, Study Abroad Santiago, Chile, hosted by Durham Technical Community College, Summer 2005