

David J. Hunter

Education

Ph.D., Mathematics, University of Virginia, May 1997.

Dissertation: “Stable Homotopy Groups of Spheres and Brown-Gitler Spectra”

Thesis Advisor: Nicholas J. Kuhn

M.S., Mathematics, University of Virginia, May 1994.

B.S. *magna cum laude*, Mathematics, University of Illinois, May 1990.

Teaching Experience

Associate Professor of Mathematics, Westmont College, May 2002–present.

Assistant Professor of Mathematics, Westmont College, August 2000–May 2002.

Assistant Professor of Mathematics, North Central College, September 1997–June 2000.

Taught Abstract Algebra I and II, Probability and Statistics I and II, Differential Equations I and II, Linear Algebra, College Geometry, and Calculus I–IV. Helped manage the College’s web site, conducted faculty technology training workshops, sponsored the Math Club, and served on various committees.

Graduate Instructor, University of Virginia, August 1992–August 1997.

Taught Introduction to Statistics, Probability/Finite Mathematics, and Applied Calculus I and II as the primary instructor with full responsibility. Taught Graduate Algebra I–II, Calculus I, II, and III and Applied Calculus I as the teaching assistant. Participated in department and university-wide teacher training programs.

Teacher, Oak Park and River Forest High School, August 1990–July 1992.

Taught a range of high school mathematics courses, including computer science and statistics, to a racially and culturally diverse student body. Served on school-wide committees and coached the math and chess teams. Participated in meetings of professional organizations.

Journal Articles

Mahowaldian families of elements in stable homotopy groups revisited, D. J. Hunter and N. Kuhn, *Mathematical Proceedings of the Cambridge Philosophical Society*, (127), 1999, pp. 237–251.

Characterizations of spectra with \mathcal{U} -injective cohomology which satisfy the Brown-Gitler property, D. J. Hunter and N. Kuhn, *Transactions of the American Mathematical Society*, (352), March 2000, pp. 1171–1190.

How rare is symmetry in 12-tone musical rows? D. J. Hunter and P. T. von Hippel, *American Mathematical Monthly*, (110), February 2003, pp. 124–132.

Regular correspondent for *Media Highlights*, College Mathematics Journal, Summer 2001–present. Reviews appearing in:

32:4, September 2001, **33:5** November 2001, **33:1** January 2002, **33:2** March 2002, **33:3** May 2002, **34:1** January 2003, **34:2** March 2003, **34:3** May 2003, **34:4** September 2003, **34:5** November 2003, **35:1** January 2004, **35:2** March 2004, **35:4** September 2004, **35:5** November 2004, **36:1** January 2005, **36:4** September 2005, **37:2** March 2006, **37:3** May 2006, **37:4** September 2006, **37:5** November 2006.

The Two Color Theorem, D. J. Hunter. Discrete Mathematics Resource Guide, Mathematical Association of America, to appear.

Books

Essentials of Discrete Mathematics, D. J. Hunter. Jones and Bartlett Inc. Expected publication in 2008.

Papers Presented († denotes invited speaker)

Why Biology Majors Should take Discrete Mathematics

Session on Biomathematics in the First Two Years, MAA National Meeting, San Jose, CA, August 2007.

Exercises in Reconstructing Evolutionary Trees

Session on Nifty Examples in Discrete Mathematics, MAA National Meeting, Albuquerque, NM, August 2005.

Widening the Audience for Discrete Mathematics

MAA National Meeting, Albuquerque, NM, August 2005.

The Perfect Shuffle: Mathematical Apologetics

Session on Applications of Mathematics in Computer Science, MAA National Meeting, Phoenix, AZ, January 2004.

Phylogenetic Distance and Coxeter Groups

SCNSMAA Meeting, Pomona, CA, October 2003.

† *How rare is symmetry in 12-tone musical rows?*

Mathematics Colloquium, University of Redlands, Redlands, CA, February, 2002.

Group exercises for abstract algebra

Session on Learning to Prove in Cooperative Learning and Technology Supported Environments, MAA National Meeting, San Diego, CA, January 2002.

Symmetry in 12-tone musical rows

SCSMAA Meeting, Los Angeles, CA, October 2001.

† *Group exercises for abstract algebra*

Panelist for discussion on modern pedagogy in upper division courses, ISMAA Meeting, Naperville, IL, March 2000.

† *Top ten reasons to have a course web page*

ISMAA Meeting, Naperville, IL, March 2000.

- † *RSA cryptography: An application of “theoretical” mathematics*
 Mu Alpha Theta induction ceremony, Joliet Catholic Academy, November 1999.
- Duals of summands of $B\mathbf{Z}/p$*
 Topology Session, AMS National Meeting, San Antonio, TX, January 1999.
- † *Characterizing spectra with \mathcal{U} -injective cohomology which satisfy the Brown-Gitler property*
 Topology Seminar, Northwestern University, Evanston IL, April 1998.
- † *Characterizing spectra with \mathcal{U} -injective cohomology which satisfy the Brown-Gitler property*
 Topology Seminar, University of Chicago, Chicago IL, March 1998.
- † *Some new infinite families in ${}_p\pi_*^S$*
 Fields Institute Conference on Unstable Homotopy Theory, Toronto, Ontario, June 1996.
- † *Brown-Gitler spectra, Ω^2S^3 , and π_*^S*
 Regional Meeting of the American Mathematical Society: Special Session on Homotopy Theory, Lawrenceville, New Jersey, October 1996.

Student Research Projects

- Investigation of Phylogenetic Tree Reconstruction*, Chase Clanton, Summer, 2005.
 Presented at the 2005 Westmont College Celebration of Undergraduate Research.
- Hybridization of Euclidean 2-space and the Poincaré Disk Model for Planar Geometry*, Gib Gerard, Manuel Reyes and Kevin Kishiyama. Presented at the March 2004 SCNSMAA meeting in San Diego, CA, and at the 2004 Westmont College Undergraduate Research Symposium.
- Transforming Origami Into Knots*, Chase Clanton, Justin Marks, and Michael Strongman. Presented at the March 2004 SCNSMAA meeting in San Diego, CA, and at the 2004 Westmont College Undergraduate Research Symposium.
- Is National Sovereignty Possible? A Geometric Look at International Agreements*, Kristin Bailey. Presented at the 2004 Westmont College Undergraduate Research Symposium.
- Applications of Group Theory to Rubik-Type Puzzles*, Kerin Heck and Jody Radowicz. Presented at the March 2000 ISMAA meeting and at the May 2000 Rall Symposium for Undergraduate Research, North Central College.
- Knots and DNA Gel Electrophoresis*, Tammy Pudzimis, Haven Johnson, Anna Tollberg. Presented at the Rall Symposium for Undergraduate Research, North Central College, May 2000.
- A Family of Torus Knots*, Lisa Platkus, Evie Rote, Jenni Underhill. Presented at the Rall Symposium for Undergraduate Research, North Central College, May 2000.
- Knots and their Effects on Manifolds*, Sarah Schmidt, Jackie Regan, Carrie Schramm. Presented at the Rall Symposium for Undergraduate Research, North Central College, May 2000.

Traffic Flow on Chicago Avenue: A Dynamical Systems Approach, Norman Johnson, David Kang, Lisa Lim. Presented at the Rall Symposium for Undergraduate Research, North Central College, May 1999.

Differential Equation Models for Computer Virus Propagation, Anusha Gururajan, Tim Johnson, Rachel O'Toole. Presented at the Rall Symposium for Undergraduate Research, North Central College, May 1999.

Service to Mathematical Community

Referee for College Mathematics Journal, 2001–present.

Referee for Journal of Online Mathematics and its Applications, 2001–2004.

Board Member, Southern California Section of the Mathematical Association of America (Web Page Editor), October 2001–present.

Grants Received

Implementing algebraic structures in C++
Summer Development Grant, Westmont College, 2001.

Computer Visualizations of Higher Dimensional Topological Phenomena
Summer Faculty Development Research Grant, North Central College, 1999.

Stable Decomposition of Classifying Spaces and Spanier-Whitehead Duality
Summer Faculty Development Research Grant, North Central College, 1998.

Recent Conferences and Workshops

MATHFEST, San Jose, CA, August 2007.

MATHFEST, Albuquerque, NM, August 2005.

Southern California-Nevada Section of the Mathematical Association of America Spring Meeting, Los Angeles, CA, March 2005.

NSF PREP Workshop on Nifty Applications in Discrete Mathematics, Valparaiso University, Valparaiso, IN, June 2004. Invited Participant.

Southern California-Nevada Section of the Mathematical Association of America Spring Meeting, San Diego, CA, March 2004.

National Meeting of the American Mathematical Society and Mathematical Association of America, Phoenix, AZ, January 2004.

Southern California-Nevada Section of the Mathematical Association of America Fall Meeting, Pomona, CA, October 2003.

NSF PREP Workshop on Knot Theory, Wake Forest University, Winston-Salem NC, June 2002. Invited Participant.

National Meeting of the American Mathematical Society and Mathematical Association of America, San Diego, CA, January 2002.

Southern California Section of the Mathematical Association of America Fall Meeting, Los Angeles, CA, October 2001.

Illinois Section of the Mathematical Association of America Annual Meeting, Augustana College, Rock Island, IL, March 2000. Regional Project NExT program.

MATHFEST, Providence, RI, July 1999. Project NExT Fellowship program. Included a short course on undergraduate research. Invited Participant.

Seminar on the Quests of the Historical Jesus, Westmont College, Santa Barbara, CA, June 1999. Invited Participant.

Illinois Section of the Mathematical Association of America Annual Meeting, Augustana College, Rock Island, IL, April 1999. Regional Project NExT program.

National Meeting of the American Mathematical Society, San Antonio, TX, January 1999. Project NExT Fellowship program. Invited Participant.

MATHFEST, Toronto, Ontario, July 1998. Project NExT Fellowship program. Included a short course on active learning techniques.

Awards and Honors

Project NExT Fellow, 1998–1999.

Society of Actuaries Exams 100 and 110 (60 credits)

Graduate Research Fellowship (competitive), University of Virginia, 1995–1996.

Graduate Assistantship, University of Virginia, 1992–1995, 1996–1997.

Department of Education Teacher Trainee Program, University of Virginia, 1992–1996

Bronze Tablet, University of Illinois, 1990.

Phi Beta Kappa, University of Illinois, 1990.

Professional Memberships

Mathematical Association of America

Association of Christians in the Mathematical Sciences

National Council of Teachers of Mathematics, 1990–1992

Illinois Council of Teachers of Mathematics, 1990–1992

Metropolitan Mathematics Club of Chicago, 1990–1992