Erika L.C. King

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EDUCATION

Ph.D. Mathematics, Vanderbilt University, Nashville, Tennessee, December 2002.
       Thesis: *Characterizing and Comparing Some Subclasses of Well-Covered Graphs*.
       Thesis Advisor: Michael D. Plummer.
M.S. Mathematics, Vanderbilt University, Nashville, Tennessee, May 1998.
Coursework in Mathematics, Connecticut College, New London, Connecticut, August 1995-
       May 1996 (Topology, Independent Study in Graph Labeling).
A.B. in Mathematics, *cum laude,* Smith College, Northampton, Massachusetts, May 1995.
       Junior semester abroad: Budapest Semesters in Mathematics, Budapest, Hungary, 1994.

HONORS and AWARDS

Co-PI, NSF-REU: *Discovering Mathematics in New York State*, 2018-2022 (with Joseph
       Rusinko and Jonathan Forde)
R.L. Moore Project NExT Fellow, 2003-2004. (Project NExT is a professional development
       program of the Mathematical Association of America.)
Arts and Sciences Graduate Select Scholarship, Vanderbilt University, 1996-2000.
Graduate Teaching Assistantship, Vanderbilt University, 1996-2001.
Ann Kirsten Pokora Prize in Mathematics, Smith College, May 1995.
First Group Scholar, Smith College, 1992.
Dean's List, Smith College, 1991-1992, 1992-1993, 1994-1995.

TEACHING EXPERIENCE

Associate Professor of Mathematics, Hobart and William Smith Colleges Mathematics and
Computer Science Department (July 2010 – present).

Assistant Professor of Mathematics, Hobart and William Smith Colleges Mathematics and
Computer Science Department (July 2004 – June 2010).

Visiting Instructor/Assistant Professor of Mathematics, Hobart and William Smith Colleges
Mathematics and Computer Science Department (August 2001 – July 2004).

Calculus Instructor, Vanderbilt University Mathematics Department (August 1996 – May
2001). Participated in one year of training: observing instructors, grading with and teaching for a
mentor. Taught three Calculus I classes, four Calculus II classes, and one Survey of Calculus
course during seven semesters and one summer, classes of 11-33 students: entirely responsible
for preparing and presenting class lectures, organizing group work, holding office hours, creating
and grading assessments. Assisted Learning Center as math tutor and study hall operator.

Teaching Mentor, Vanderbilt University Mathematics Department (August 2000 – May 2001).
Advised new graduate students preparing to assume teaching duties. Supervised and assessed
their lecturing, grading, and test construction.

Teacher, Nashville State Technical Institute (April 2000 – August 2000). Taught six three-hour mathematics workshops designed to prepare students for the COMPASS entrance exam.

Tutor, Nashville State Technical Institute (July 1998 – December 1998, June 2000 – August 2000). Tutored students of all ages (in basic algebra and trigonometry, business math, statistics, calculus, and discrete math) in the Learning Center during summer sessions. Tutored two students one-on-one in basic algebra for the Fall 1998 term.

Instructional Assistant, Connecticut College Mathematics Department (September 1995 – June 1996). Presented scenes from *Rosencrantz and Guildenstern Are Dead* by Tom Stoppard, led discussion sections and co-directed a production of *Arcadia* by Tom Stoppard for Mathematics and the Arts class. Substituted for professor in a Discrete Mathematics course. Organized and conducted tutored study halls. Tutored calculus and algebra students one-on-one and delegated tutoring responsibilities. Produced regular Mathematics Department newsletters. Redesigned and regularly updated Mathematics bulletin board.

COURSES TAUGHT AT HOBART AND WILLIAM SMITH COLLEGES

MATH 110 Discovering in Mathematics
MATH 130 Calculus I
MATH 131 Calculus II
MATH 135 First Steps into Advanced Mathematics
MATH 204 Linear Algebra
MATH 232 Multivariable Calculus
MATH 278 Number Theory
MATH 313 Graph Theory
MATH 371 Topics in Mathematics: Combinatorics
MATH 371 Topics in Mathematics: Graph Theory
MATH 375 Abstract Algebra
MATH 571 Topics in Mathematics: Graph Theory
RCOL 102 Mathematics Readings in the Popular Press

SUMMER and HONORS STUDENTS

Michael Rivera and Naima Nader, HWS-REU, Summer 2021.
Rayan Ibrahim and Rebecca Anderson, HWS-REU, Summer 2018.
Mark Curiel H'17 and Jacqueline Kane WS'18, *Classifying Well-Covered Graphs*, Summer 2016.
Trevor J. Gionet Jr H'12 and Yixiao Sha WS'12, *Exploring Graph Theory through Well-Covered Graphs*, Summer 2010.
Adam Giambrone H'20, *A Vertex-Magic Edge Labeling Game on Graphs with Cycles*, 2007-08.
Leya Tesmenitsky WS'04, *Vertex Magic Labeling*, 2003-04.

RESEARCH INTERESTS

Graph Theory: well-covered graphs, domination theory, graph labeling, zero-forcing sets

PUBLICATIONS

1. **Introducing 3-Path Domination in Graphs,** (with Rayan Ibrahim and Rebecca Jackson,

HWS-REU Summer 2018 Students), *J. Combin. Math. Combin. Comput.* (accepted).

2. **An unexpected discovery,** *Involve, a Journal of Mathematics,* **7-3** (2014) 373-376.

3. **A revision and extension of results on 4-regular, 4-connected, claw-free graphs,** (with Trevor J. Gionet Jr. '12 and Yixiao Sha '12), *Discrete Applied Mathematics,* **159** (2011) 1225-1230.

4. **Vertex-Magic Edge Labeling Games on Graphs with Cycles**, (with Adam Giambrone '08), *Journal of Combinatorial Mathematics and Combinatorial Computing,* **78** (2011) 75-96.

5. **Dominating Sets in Triangulations**, (with Michael J. Pelsmajer), *Discrete Mathematics,* **310** (2010) 2221-2230.

6. **Stable Well-Covered Graphs**, *Ars Combinatoria,* **93** (2009) 313-319.

7. **Comparing Subclasses of Well-Covered Graphs**, *Congressus Numerantium,* **180** (2006) 145-159.

8. **Characterizing a Subclass of Well-Covered Graphs**, *Congressus Numerantium*, **160** (2003) 7-31.

9. **Characterizing and Comparing Some Subclasses of Well-Covered Graphs**, Ph.D. Dissertation, Department of Mathematics, Vanderbilt University (2002).

10. **From Here to Infinity: A Foundation for Calculus**, Vanderbilt University Department of Mathematics. Thompson Learning Custom Publishing: 2001. Co-wrote supplement used by Vanderbilt University for its annual algebra and trigonometry review.

PROFESSIONAL ACTIVITIES

External Reviewer of Scholarship for Review I case at another liberal arts college. (2022)

Director for HWS-REU: Summer 2020 (postponed due to COVID), Summer 2021.

Faculty Mentor for HWS-REU: Summer 2018, Summer 2021.

Journal Referee: *Ars Combinatoria, Ars Mathematica Contemporanea, Australas. J. Combinatorics, Discrete Applied Mathematics (2022), Graphs and Combinatorics, J. Combin. Math. Combin. Comput. (2021), Utilitas Mathematica*.

Reviewer for Mathematical Reviews/MathSciNet.

Reviewer: <u>Heart of Mathematics</u> by Edward Burger and Michael Starbird – Proofread and made suggestions about the new graph theory chapter for the next edition of the text. (2012)

Reviewer: <u>Chapter Zero</u> by Carol Schumacher – Read five chapters of the second edition and offered suggestions and comments about improvements for the third edition. (2011)

Society Membership: American Mathematical Society, Association of Women in Mathematics, Mathematical Association of America

INVITED TALKS

Discovering the missing piece: 4-connected, 4-regular, claw-free graphs of odd order. Special Session on New Advances in Graph Theory at the AMS Eastern Sectional Meeting at the Rochester Institute of Technology; Rochester, New York (September 22-23, 2012).

Discovering the missing piece: 4-connected, 4-regular, claw-free graphs of odd order. Undergraduate Mathematics Colloquium at Houghton College; Houghton, New York (November 3, 2011).

Searching for Girth Four Well-Covered Graphs. CoNE Revisited: a celebration of the inspirations of Michael Albertson; Northampton, Massachusetts (March 26-28, 2010).

The intriguing task of dominating planar graphs. SMath: A Conference of Smith Mathematicians; Northampton, Massachusetts (September 29, 2007).

Some Recent Results on Well-Covered Graphs. Graph Theory Seminar at Wesleyan University; Middletown, Connecticut (November 18, 2005).

Why It's Good to Be Well-Covered and a Look at Figuring Out When You Are. Undergraduate Mathematics Colloquium at Connecticut College; New London, Connecticut (November 17, 2005).

Well-Covered Graphs: Some History and Some Recent Results. Graph Theory Seminar at Dalhousie University; Halifax, Nova Scotia, Canada (November 2, 2005).

Comparing Subclasses of Well-Covered Graphs. Atlantic Association for Research in the Mathematical Sciences Special Symposium on Graph Theory and Combinatorics held in conjunction with the Atlantic Provinces Council on the Sciences annual meeting; Wolfville, Nova Scotia, Canada (October 23, 2005).

New Experiences with Discovery Methods, a panel moderated by Ed Burger. 7th Annual Legacy of R. L. Moore Conference organized by the Educational Advancement Foundation, Austin, TX (March 13, 2004).

CONTRIBUTED TALKS

Introducing 3-Path Domination in Graphs. 33rd Midwest Conference on Combinatorics, Cryptography and Computing; Rochester, New York (October 11-13, 2019).

Discovering the missing piece: 4-connected, 4-regular, claw-free graphs of odd order. 43rd Southeastern International Conference of Combinatorics, Graph Theory and Computing; Boca Raton, FL (March 5, 2012).

Vertex-Magic Edge Labeling Games on Graphs with Cycles. 23rd Midwest Conference on Combinatorics, Cryptography and Computing; Rochester, New York (October 3-4 2009).

Dominating Triangulated Graphs. Spring Meeting of the Seaway Section of the Mathematical Association of America; Rochester, New York (April 4, 2009).

Well-Covered Graphs: why we like them and how we find them. Undergraduate Mathematics Colloquium at Hobart and William Smith Colleges; Geneva, New York (March 26, 2009).

Comparing Subclasses of Well-Covered Graphs. 19th Midwest Conference on Combinatorics, Cryptography and Computing; Rochester, New York (October 7, 2005). Also chaired session.

Comparing Subclasses of Well-Covered Graphs. 20th British Combinatorial Conference; Durham, England (July 14, 2005).

Characterizing a Subclass of Well-Dominated Graphs. 34th Southeastern International Conference of Combinatorics, Graph Theory and Computing; Boca Raton, FL (March 7, 2003).

Characterizing Well-Dominated Graphs. Conference in Celebration of Smith College Alumnae Mathematicians; Northampton, MA (April 21, 2001).

OTHER PROFESSIONAL ACTIVITIES

Research Retreat on Zero-Forcing sets in graphs sponsored by Dr. Cheryl Grood, Swarthmore College (June 2022).

Research Retreat on Zero-Forcing sets in graphs sponsored by Dr. Bonnier Jacob, National Technical Institute for the Deaf at RIT (July 2021).

Creating a Better Summer Experience: A DEI Workshop for REU Directors and Faculty Mentors, through the Center for Minorities in the Mathematical Sciences (May 22, 2021).

Nebraska Conference for Undergraduate Women in Mathematics, virtual (January 22-24, 2021). Organized attendance for students and attended talks.

AMS Webinar: Advocating for Students of Color, (Fall 2020).

Joint Mathematics Meetings, Seattle, Washington (January 6-9, 2016). Directed interviews for departmental tenure track positions and attended talks.

Joint Mathematics Meetings, San Antonio, Texas (January 10-13, 2015). Directed interviews for departmental tenure track position and attended talks.

Joint Mathematics Meetings, Boston, Massachusetts (January 4-7, 2012). Assisted in interviews for departmental tenure track position and attended talks.

40 Years and Counting: AWM's Celebration of Women in Mathematics, Providence, Rhode Island (September 17-18, 2011). Arranged overnight trip for two students.

National Science Foundation Workshop on STEM Real World Applications of Mathematics, Rochester Institute of Technology, Rochester, New York (July 2009).

Joint Mathematics Meetings, Washington, D.C. (January 6-8, 2009). Attended minicourse (An introduction to the mathematics of modern cryptography) as well as talks.

Hudson River Undergraduate Mathematics Conference, South Hadley, MA (April 19, 2008). Helped organize the trip, five students attended, my honors student, Adam Giambrone '08

presented.

Fall Meeting of the Seaway Section of the Mathematical Association of America, Rochester, New York (October 20, 2007).

NSF Workshop on Grant Writing by Tom Wenzel at HWS (May 19, 2007).

Fall Meeting of the Seaway Section of the Mathematical Association of America, Poughkeepsie, New York (October 14, 2006). Arranged overnight trip for six students.

SIAM Conference on Discrete Mathematics, Victoria, British Columbia, Canada (June 25-28, 2006).

Visiting Scholar, St. Mary's University, Halifax, Nova Scotia, Canada (October-November 2005); supported in part by an NSERC grant.

Visiting Scholar, Illinois Institute of Technology, Chicago, Illinois (August 2005).

Spring Meeting of the Seaway Section of the Mathematical Association of America, Kingston, Ontario (April 1-2, 2005). Chaired contributed talk session. Arranged overnight trip for two students.

36th Southeastern International Conference on Combinatorics, Graph Theory and Computing, Boca Raton, FL (March 7-11, 2005).

Joint Mathematics Meetings, Atlanta, GA (January 5-8, 2005). Judged undergraduate poster session. Interviewed math position candidates.

Hudson River Undergraduate Mathematics Conference, South Hadley, MA (April 3, 2004). Helped organize trip, drove students, five students attended, my honors student Leya Tesmenitsky '04 presented.

Eighteenth Midwest Conference on Combinatorics, Cryptography and Computing, Rochester, NY (October 28-30, 2004).

MathFest 2004/Project NExT workshops, Providence, RI (August 11-14, 2004).

Joint Mathematics Meetings/Project NExT workshops, Phoenix, AZ (January 7-10, 2004).

Teaching Introductory Combinatorics by Guided Discovery, Dartmouth (August 10-15, 2003).

MathFest 2003/Project NExT workshops, Boulder, CO (July 28- August 2, 2003).

Joint Mathematics Meetings, Baltimore, MD (January 15-18, 2003).

Horizons in Combinatorics held in conjunction with the sixteenth annual Shanks Lectures, Nashville TN (May 21-24, 2001). Attended talks and worked as a student aide to the conference organizers.

Thirteenth Cumberland Conference on Combinatorics, Graph Theory and Computing, Huntsville, AL (May 11-13, 2000).

Thirteenth Midwestern Conference on Combinatorics, Cryptography and Computing, Normal, IL (October 14-16, 1999).

COMMUNITY SERVICE AT THE COLLEGES

Campuswide:
Grievance Committee (Spring 2005, Spring 2006, January-December 2011, January-December 2022): including serving as convener of panel (2011).
Outside Representative on Etin Anwar's Review III Committee (January – February 2020).
Outside Representative on Charity Lofthouse's Review II Committee (August-October 2016).
Panel Member for Hartford College Counselors Visit (August 2016).
Faculty Examiner, Oluwatamilore Areola (Political Science), Honors Oral Examination (Spring 2015).
Philosophy Search Committee (2014-2015).
Presented Science Awards at Moving Up Day (April 2014).
Trustee Scholars' Weekend Instructor for Admissions: offered mock class to prospective first-years entitled "Dominating Queens and Other Adventures in Graph Theory." (March 2014).
Committee on Committees (Spring 2014).
Outside Representative on Stacey Philbrick-Yadav's Review II Committee (August-October 2013).
Contributor to April 2013 CTL Newsletter with note on *"The Mentoring Program in the Department of Mathematics and Computer Science"*.
Facilitated Informal Lunch Discussion for CTL on Classroom Observations (February 2013).
Faculty Salary and Compensation Subcommittee (September 2009-December 2011).
Poetry Search Committee (2010-2011).
Teagle Group 5 (September 2008-December 2010).
Faculty Examiner, Lisa Maticic (Environmental Studies and Anthropology), Honors Oral Examination (Spring 2010).
International Community Fellow: contact prospective international students, etc. (Spring 2008-2013).
Faculty Examiner, Kathryn Lawton (History), Honors Oral Examination (Spring 2009).
Interviewed Prospective Trustee Scholars (February 2004, March 2006, March 2008).
Brainstorming Session for HEOP/SAOP (February 2008).
German Search Committee (2007-2008).
Untenured Faculty Panel, New Faculty Orientation (August 2007).
Faculty Theme House Advisor: Creative Arts House (August 2007-May 2008).
Department representative to the NY State Department of Education (February 2007).
Faculty Athletic Fellow, Hobart Squash; attended practices, and home and away games; sent emails; gave academic advice; helped incoming first years figure out their courses (Fall 2005 – Spring 2008).
Co-organizer with Paul Kehle and Kristen Welsh of Phi Beta Kappa Visiting Scholar (Jean Taylor) event (Fall 2006).
Faculty Examiner, Kathleen Bush (Environmental Studies), Honors Oral Examination (Spring 2006).
Faculty Examiner, Kara Kenney (Art History), Honors Oral Examination (Spring 2006).
Participated in WS Named Scholars luncheon (Spring 2006).
Wrote Letters to Prospective Faculty Scholars (April 2006).
Presented Science Awards at Moving Up Day (April 2005).
Faculty Examiner, Jennifer Davenport (English and Women's Studies), Honors Oral Examination

(Spring 2005).
Phased Retirement Committee: helped create and revise the colleges phased retirement plan
    (Spring 2005).
Physics Department Faculty Special Review Committee: Michael Faux (Spring 2005).
Day of Service (October 2003).
Faculty Examiner, David Whippen (Studio Art), Honors Oral Examination (Spring 2003).
Trustee Scholars' Weekend Instructor for Admissions: offered an academic session to prospective
    first-years entitled "Dominating Queens." (February 2002 and March 2003).

Mathematics and Computer Science Department:
Math Club Faculty Advisor: (Spring 2022 – present)
Organized trip for William Smith students to attend the Nebraska Conference for Undergraduate
    Women in Mathematics each January (2007 – present)
Supervisor for hiring and mentoring the Math Intern: (2013 – present)
Departmental Mentoring Program: Mentor for Marc Corliss (Spring 2011), Jonathan Forde (Fall
    2011), Eric Nelson (Spring 2013), Mark Radosevich (Fall 2013), Andrew Gainer-Dewar
    (Spring 2015), Yan Hao (Fall 2016), Joseph Rusinko (Spring 2017), Jennifer Biermann
    (Spring 2020), Chris Fietkiewicz (Fall 2021), Hanqing Hu (Spring 2022)
Review III Committee: Jonathan Forde (Fall 2021 – Spring 2022)
Chair Review II Committee: Jocelyn Bell (Fall 2021)
Chair Review II Committee: Jennifer Biermann (Fall 2021)
Chair Review I Committee: Jocelyn Bell (Spring 2019)
Chair Review I Committee: Jennifer Biermann (Spring 2019)
Chair Review II Committee: Yan Hao (Fall 2017)
Chair Review II Committee: Joseph Rusinko (Fall 2017)
Department Chair (July 2015-June 2018).
Search Committee, tenure track positions: in addition to regular duties, conducted interviews
    at the Joint Mathematics Meeting (2014-2015, 2015-2016).
Search Committee, leave replacement position (2005-2006, 2014, 2017).
Attended Chairs' Retreat for Current Chair (January 2014).
Organized Schedule for Departmental Review (April 2013).
Participated in tenure track hirings (Spring 2003, 2004, 2005, 2006, 2007, 2012, 2013).
Mathematics/Computer Science Seminar Coordinator: invite, organize and advertise for speakers
    from campus and other institutions, including alums and speakers from the SIAM
    Visiting Lecturer Program (January 2003 – December 2011).
Review I Committee: Jaime Barrera (Spring 2011).
Math/CS Club Faculty co-Advisor: attend all meetings, help students organize events such as
    Math/CS Jeopardy, PI Day, Movie Night, and trips to conferences (October 2002 – May
    2011).
Search Committee, leave replacement position: in addition to regular duties, conducted interviews
    at the Joint Mathematics Meeting (2004-2005).
Worked Open House Department Table (April 2002, 2003, 2004, 2007).
Faculty Special Review I Committee: Scotty Orr (Spring 2003).