

Curriculum Vitae of Colin L. Starr

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• Education

- ◇ Ph.D., Mathematics, University of Kentucky, August, 1998. Graduate GPA: 4.00.
- ◇ M.S., Mathematics, University of Kentucky, May, 1995.
- ◇ B.S., Mathematics and Physics (double major), Music minor, Linfield College, May, 1993 (Summa Cum Laude). Undergraduate GPA: 3.96.

• Professional History

- ◇ Assistant Professor, Department of Mathematics, Willamette University, 2003 - present.
- ◇ Assistant Professor, Department of Mathematics and Statistics, Stephen F. Austin State University, 1998 - 2003.

• Publications

- ◇ Accepted (pending revision) for Discrete Mathematics. “Estimates of the Pythagoras Number of $\mathbb{R}_m[x_1, \dots, x_n]$ through Lattice Points and Polytopes,” with Dr. David B. Leep. Revisions submitted August, 2007.
- ◇ Submitted August, 2007 to Communications in Algebra. “A Generalization of a Theorem of Brauer and Birch,” with Dr. David B. Leep.
- ◇ To appear in the Missouri Journal of Mathematical Sciences (publication date unknown). “Complementary Graphs and the Chromatic Number,” with Dr. Galen E. Turner III.
- ◇ Accepted (pending revision) for the Journal of Integer Sequences. “The Solution to a Frobenius-level Problem,” with Dr. Inga Johnson and students Sean Powers, Charles Trevelyan, and Craig Webster. Revisions submitted August, 2007.
- ◇ In preparation. “Another Solution to a Frobenius-level Problem.” (From SMRP, Summer 2006, with Professor Inga Johnson and students Paige Cudworth, Travis Dailey, and Brad Kehr.)
- ◇ “Planar Groups,” with Dr. Galen E. Turner. Journal of Algebraic Combinatorics, 19, pp. 283-295, 2004.
- ◇ Supporting and Strengthening Standards-Based Mathematics Teacher Preparation, co-author. UT Dana Center, 2004.
- ◇ Intermediate Algebra, with Dr. Jill Dumesnil. Published by Scholarship Press, Inc., 2004.
- ◇ College Algebra: A Dream of Fields, with Dr. Jill Dumesnil. Published by Fountainhead Press, 2003. (Now out of print.)
- ◇ “Polynomials in $\mathbb{R}[x, y]$ that are Sums of Squares in $\mathbb{R}(x, y)$,” Proc Amer Math Soc, 129 (2001), no. 11, 3133-3141, with Dr. David B. Leep.
- ◇ MAPLE eccentricity demonstration, Demos with Positive Impact (online), Fall, 1999.
<http://mathdemos.gcsu.edu/mathdemos/acknowledgements.html>

• Grants

- ◇ NSF grant for an REU-RET consortium. \$491,400 for 2007-2010.
- ◇ Spring 2006. Received Hewlett grant for undergraduate summer research, \$9,000 for two years.
- ◇ Fall 2001 - 2003. Writer and member of advisory board for FIPSE grant under principal investigator Uri Treisman and Project Director Deborah Pace.
- ◇ Summer 2002. NSF Grant to participate in a week-long MAA PREP workshop on Knot Theory.

- ◇ Summer 2001. Faculty Development grant for research from Stephen F. Austin State University. \$9,990, including support for one graduate student.
- ◇ Summer 2000. NSF travel grant for the AMS meeting, “Mathematical Challenges of the 21st century.” \$1,000.

- **Recognition and Awards**

- ◇ 2005 - 2006 Faculty Achievement Award, Willamette University
- ◇ 1999 Project NExT Fellow.
- ◇ 1997 - 1998 University of Kentucky Presidential Fellowship (one of nine awarded).
- ◇ 1996 - 1997 Royster Award, the UK Math Dept. graduate student teaching award.
- ◇ 1993 - 1996 3-year Quality Achievement Fellowship from the University of Kentucky.

- **University Teaching**

- ◇ Fall 2003 - Present. Willamette University courses: Discrete Mathematics, Brief Calculus, Differential Equations, Calculus I, Calculus II, Multivariable Calculus, Linear Algebra, Number Theory, Abstract Algebra, Modern Geometry, College Colloquium, Mathematics Senior Seminar.
- ◇ Summer 1998 - Spring 2003. Stephen F. Austin State University courses: Intermediate Algebra, College Algebra, Problem-Solving for Elementary Teachers (three course sequence), Analytic Geometry, Math in Society (liberal arts math course), Calculus I and II (differential and integral calculus), Introduction to Modern Mathematics, undergraduate Linear Algebra, Abstract Algebra (undergraduate and graduate), College Geometry.
- ◇ Summer 1998 - present. Taught several independent study courses, including Number Theory, Graduate Linear Algebra, Cryptography, and an annual Putnam preparation course.
- ◇ 2002 - 2003. Advised Master’s thesis on Knot Theory.
- ◇ 2001 - 2002. Advised Master’s thesis on Matroid Theory.
- ◇ 1999 - 2000. Advised Master’s thesis on Galois Theory.
- ◇ Summer 1994 - Summer 1997. Teaching Assistant, Department of Mathematics, University of Kentucky. Full responsibility for nine different courses.

- **Conferences, Workshops, and Presentations**

- ◇ Invited addresses
 - Fall 2006. “Mission: Impossible – Angle Trisection,” at Pacific University.
 - November 2004. “Unipancyclic Matroids,” at the Portland Area Lecture Series (Portland State University).
 - November 2003. “Regular Solids,” at the Linfield College physics seminar.
- ◇ Presentations
 - Spring 2007. “Mission: Impossible – Angle Trisection,” Willamette University Mathematics Colloquium.
 - Fall 2006. “What is mathematics research?” at Willamette’s Faculty Colloquium, with Dr. Inga Johnson.
 - Summer 2006. “Hilbert’s 17th problem,” at Willamette. For Willamette University and Lewis & Clark College summer research students.
 - Spring 2005. “Matroids for Undergraduates” and “The Graph of a Group,” both presented at Pacific Northwest MAA Section meeting, University of Puget Sound.
 - October 2004. “Coloring for Grown-ups” at Mini-University, Willamette.
 - Spring 2004. “Conflict Prevention with Crayons” at Willamette’s Faculty Colloquium.
 - January 2002. “Complementary Graphs and the Chromatic Number,” Joint Meetings in San Diego, CA.
 - January 2001. “Planar Groups,” Joint Meetings in New Orleans, LA.
 - March 2000. “College Algebra at the College Level,” Texas Section meeting of the MAA at UT Austin.

- March 1999. "Oral Grading," Texas Section meeting of the MAA at Southwest Texas State University.
- Spring 1999. "Number Theory Through Tiling," Second Annual Science and Mathematics Conference, Nacogdoches, TX.
- January 1999. "Limitations of the Cage Method of Choi, Lam, and Resnick for Computing $P(\mathbb{R}[x_1, \dots, x_n])$ " (Shortened), Joint Meetings in San Antonio, TX.
- January 1998. "Sums of Squares in $\mathbb{R}[x, y]$ and $\mathbb{R}(x, y)$ " (Shortened), Joint Meetings in Baltimore, MD.
- October 1998. "Limitations of the Cage Method of Choi, Lam, and Resnick for Computing $P(\mathbb{R}[x_1, \dots, x_n])$," Second Annual Missouri Algebra Weekend in Columbia, MO.
- October 1997. "Positive Semidefinite Polynomials in $\mathbb{R}[x, y]$ that are not a Sum of Squares in $\mathbb{R}(x, y)$," First Annual Missouri Algebra Weekend in Columbia, MO.
- March 1997. "The Freshman Summer Program at the University of Kentucky," Kentucky meeting of the MAA in Bowling Green, KY.
- ◇ Invited panelist
 - October 2003. Presenter at October pre-service conference in Austin, TX.

• Professional Service

- ◇ Spring 2007 - present. Newsletter Editor for Pacific Northwest Section of the MAA (officer position).
- ◇ 2006 - 2007. Contributed Papers Chair for Pacific Northwest Section of the MAA (officer position).
- ◇ Januaries 2003, 2004, 2006, 2007. Joint meetings. Judged undergraduate poster session.
- ◇ August 2006. Sponsored Max Nosiglia (Willamette undergraduate) to the Rose-Hulman Undergraduate Mathematics Journal (online). Published April, 2007: "Euclid's Partition Problem and Ceva's Theorem." <http://www.rose-hulman.edu/mathjournal/v8n1.php>
- ◇ Spring 2006. Reviewed book project for AMS: "The Nature of Mathematics," Kelly and Kelly.
- ◇ Summers 2004 - 2006. Graded AP Calculus exams.
- ◇ Spring 2005. Initiated and organized student problem-solving session for the PNW MAA Section meeting.
- ◇ Spring 2004. Special Awards judge for the Intel International Science and Engineering Fair.
- ◇ Fall 2003. Reviewed "Parametric Plots" for the Journal of Online Mathematics; <http://www2.kenyon.edu/People/holdenerj/Calcprojects/ParametricPlotsProject/ParametricPlotsProject.htm>
- ◇ Spring 2001 - 2003. University Interscholastic League Co-contest Director (Mathematics).
- ◇ Fall 1999 - present. Project NExT 1999 listserv manager.
- ◇ 2000. Reviewed "Gray Codes" for Texas Journal of Science.
- ◇ Fall 2000, 2001. Presented lessons on logic to 8th-grade students at a small private school.
- ◇ Fall 2000. Tutored students at the Nacogdoches, Texas alternative school.
- ◇ 1999. Reviewed "Centroids in Unitary Spaces" for Texas Journal of Science.
- ◇ January 2000. Joint meetings. Co-organized a Project NExT panel discussion.

• University Service

- ◇ Summer 2007. Co-director of REU-RET consortium (with Dr. Inga Johnson).
- ◇ Spring 2007. Elected to two-year term on Academic Council.
- ◇ 2004-2007. Faculty Colloquium Co-Coordinator.
- ◇ January 2004, 2006, 2007. Interviewed job candidates at the Joint meetings of the AMS and MAA.
- ◇ Fall 2006 - present. Advisor to Willamette University Racquetball Club.
- ◇ Fall 2003 - present. Served as advisor for Willamette students.
- ◇ Fall 2003 - present. Advisor to Willamette University Math Club. (Started club in 2003.)
- ◇ Fall 2003 - Fall 2006. Served on Montag Advisory Board.

- ◇ Summer 2005, 2006. Co-director of the Summer Mathematics Research Program at Willamette University. Co-directed three Willamette students in undergraduate research.
- ◇ Spring 2004, 2005. Student Scholarship Recognition Day panel moderator.
- ◇ Summer 2004. Served on Disappearing Task Force on the First-Year Experience.
- ◇ Summer 2004. Served on QA Assessment committee.
- ◇ Spring 2000. Interviewed job candidates (for SFASU) at the Joint Meetings of the AMS and MAA.
- ◇ Fall 1998 - 2002. Advisor to the Math Clubs, SFASU. Sponsored student teams in the LA/MS Section Meeting Undergraduate Competitions.
- ◇ Fall 1999 - Spring 2002. College of Arts and Sciences representative on University Faculty Senate. Secretary 2000-2001, Webmaster 2001-2002.

• Department Service

- ◇ Spring 2004. Helped math department host OIMT; responsible for Advanced II category.
- ◇ Falls 2003 - present. Sponsored Putnam Exam teams for Willamette (including weekly practice sessions).
- ◇ Fall 2002 - Spring 2003. Assistant Professor representative on Departmental Advisory Committee (SFASU).
- ◇ Fall 1998 - 2003. Sponsored SFASU Putnam Exam teams (including weekly practice sessions) and Mathematical Contest in Modeling teams.
- ◇ Spring 2000. Chair, College Algebra Committee (SFASU).
- ◇ Fall 1999 - Spring 2000. Assistant Professor representative on Departmental Advisory Committee.
- ◇ Fall 1997. Involved with ProSeminar at the University of Kentucky, a problem-solving seminar for undergraduates.
- ◇ Fall 1996. Involved with ProMath at UK, a problem-solving competition for high school students.

• Workshops

- ◇ October 1999, 2002, 2003. October pre-service conference in Austin, TX.
- ◇ June 2002. Summer PREP Knot Theory Workshop.
- ◇ Summer 1998. Eisenhower grant workshop.
- ◇ Fall 1997. Workshop on Intercultural Communication.
- ◇ Fall 1997. Seminar on technology in the classroom.
- ◇ Fall 1996. Semester-long college teaching seminar at the University of Kentucky.
- ◇ August, 1994. Emerging Scholars Program (a collaborative learning seminar) in Austin, TX.

• Research Interests and Current Research

- ◇ King's walks and chains in n -dimensions. Jointly with Professors John Caughman (Portland State University), Nancy Neudauer (Pacific University), and Chuck Dunn (Linfield University).
- ◇ Variations on the Frobenius-like problem.
- ◇ Graph Theory.
- ◇ Matroid Theory.
- ◇ Sums of squares in $\mathbb{R}[x_1, \dots, x_n]$ and $\mathbb{R}(x_1, \dots, x_n)$.
- ◇ Elliptic curves.
- ◇ Zeroes of homogeneous forms of degree d in n variables.

• Consulting Experience

- ◇ Fall 2005 to present. Expert reviewer of state standardized tests for Measured Progress.
- ◇ 2004 to present. AP Calculus reader.
- ◇ Fall 2001 to 2005. Expert reviewer of state standardized tests for Harcourt Educational Measurement.

◇ 1999 - 2005. Wrote problems for standardized tests for several states for Harcourt.

• **Professional Associations**

◇ American Mathematical Society (AMS)

◇ Mathematics Association of America (MAA)

◇ Project NExT