

DR. LAURIE J. BURTON

Curriculum Vitae

Mathematics Department
Western Oregon University
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EDUCATION

Ph.D. Mathematics
Dissertation Area: Commutative Ring Theory
University of Oregon
December 1995

MS Mathematics
University of Oregon
June 1991

BS Mathematics
California State University, Chico
June 1989

SCHOLARLY INTERESTS

Mathematics Education for K - 8 Teachers
Reform Teaching and Assessment

ACADEMIC POSITIONS

Professor (July 2008 -- present)
Associate Professor (July 2003 -- June 2008)
Assistant Professor (September 2000 -- June 2003)
Mathematics Department
Western Oregon University

Assistant Professor (September 1996 -- June 2000)
Mathematics Department
Central Washington University

Instructor (September 1995 -- June 1996)
Graduate Teaching Fellow (September 1989 -- August 1995)
Department of Mathematics
University of Oregon

PUBLICATIONS

Texts and Associated Materials

Connect!® online homework system associated with "Mathematics for Elementary Teachers, A Conceptual Approach," Ninth Edition, Bennett, Burton and Nelson, McGraw Hill, 2012

"Mathematics for Elementary Teachers, A Conceptual Approach," Ninth Edition, Bennett, Burton and Nelson, McGraw Hill, 2012

"Mathematics for Elementary Teachers, An Activity Approach," Ninth Edition, Bennett, Burton and Nelson, McGraw Hill, 2012

"Mathematics for Elementary Teachers, A Conceptual Approach," Eighth Edition, Bennett, Burton and Nelson, McGraw Hill, 2010

"Mathematics for Elementary Teachers, An Activity Approach," Eighth Edition, Bennett, Burton and Nelson, McGraw Hill, 2010

"Visual Algebra for College Students," Burton, Math Learning Center pending, December 2008.

"College Geometry Test Items File," Second Edition, Burton, Prentice Hall, December 2007

"Mathematics for Elementary Teachers, An Activity Approach," Seventh Edition, Bennett, Burton and Nelson, McGraw Hill, 2007

"Mathematics for Elementary Teachers, Geometer Sketchpad Activities," Burton, McGraw Hill, 2007

"Active Learning in Abstract Algebra: An Arsenal of Techniques," Burton, Belcastro and McDermott, Editors: Allen Hibbard and Ellen Maycock-Parker, Contributed paper for "Innovations in Teaching Abstract Algebra" in the Mathematical Association of America's Notes Series, Spring 2002

Journal Articles

"Secret Codes with Direct Substitution," Burton, The Oregon Mathematics Teacher, October 2006

"Secret Codes with Simple Shift and Affine Ciphers," Burton, The Oregon Mathematics Teacher, March 2006

"Course Reform at Western Oregon University: A Success Story for K - 8 Mathematics Teacher Training," Burton and Fung, Preparing Future Science and Mathematics Teachers: Faculty Write About CEPT Innovations on Campuses Today, Science Math Resource Center Monograph, Montana State University, September, 2005

"Bridging the Gap: A Mathematician's Challenge, Preparation for the Mathematical Education of K - 8 Teachers," Burton, Mathematical Association of America FOCUS, May/June, 2003

"Secret Codes with the Rail Fence Cipher Method," Burton, The Oregon Mathematics Teacher, March 2003

"Secret Codes with the Polybius' Checkerboard," Burton, The Oregon Mathematics Teacher, January 2003

"Math Art Posters," Burton, The Oregon Mathematics Teacher, September 2002

"Five Project NExT Fellows Extol Their Experiences," Burton under the umbrella authorship of Joe Gallian, Mathematical Association of America FOCUS, January 1999

Invited Web Publications

"Preparing Middle Level Mathematics Teachers - A Collaboration of Three Universities," Burton and Enneking, Conference Board of the Mathematical Sciences, Fall 2001

STUDENT PUBLICATIONS

Student games written for Burton's classes, edited and submitted by Burton

"Toss 'n Solve," Loeser, Watts, Agra and Combs, The Oregon Mathematics Teacher, October 2007

"Fractzee," Karner, Burnett, Brown and Richards, The Oregon Mathematics Teacher, December 2006

"Fract it Up" Thornton, Baldwin, Laddsaw and Palmer, The Oregon Mathematics Teacher, October 2006

"Spin to Win," Amaya, Santos, Montes and Shewell, The Oregon Mathematics Teacher, December 2005

"Go Math History," Burton, Canaday, Gribskov, Heikila, Miller, Paylor, Sipprell, Stitt and Wiese, The Oregon Mathematics Teacher, October 2005

"Denominating Dominoes," Adams, Russell, Rutherford, and Walkowiak, The Oregon Mathematics Teacher, April 2005

"Fraction Pictionary," Boone, Gardner, Sather, Alfsen, and Hensley, The Oregon Mathematics Teacher, February 2005

"Fish'n for Chips," Knudsen, Sullivan, Kunders, McDaniel and Ebner, The Oregon Mathematics Teacher, December 2004

"Breaking the Rod Relay," Holeman, Johnson, Franken, and Reynolds, The Oregon Mathematics Teacher, October 2004

"Go Fraction," Waugh, Gardner, Charles, Shaw and McDermott, The Oregon Mathematics Teacher, September 2004

"Fractiontration," Schloeman, Lewis, Hargrove, Pantovich and Boorman, The Oregon Mathematics Teacher, September 2003

GRANTS

"Sonia Kovalevsky Mathematics Day for High School Girls," Burton & C. Beaver, WOU Foundation, 2012

"Sonia Kovalevsky Mathematics Day for High School Girls," Burton & C. Beaver, WOU Foundation, 2011

"Sonia Kovalevsky Mathematics Day for High School Girls," Burton & C. Beaver, WOU Foundation, 2010

"Active Learning Approaches and Visual Methods for Teaching the Foundational Mathematics for Elementary Teachers Courses," Beaver, Burton and Kruczek, Five-day PREP Workshop, Mathematical Association of America, July 2008.

"Faculty Panel Evaluator" Sean Larson, PSU, Curriculum Materials for Group Theory courses

"Sonia Kovalevsky Mathematics Day for High School Girls," Burton, WOU Foundation, April, 2006

"Sonia Kovalevsky Mathematics Day for High School Girls," Burton, Fung and Overdeep, Association of Women in Mathematics, April, 2005

"Active Learning Approaches to Teaching Mathematics Content Courses for Elementary and Middle-School Teachers," Burton and Fung, PREP Workshop, Mathematical Association of America, Summer 2003.

"Professional Development for Mentoring and Leadership (PDML)," A Portland State Eisenhower Higher Education Professional Development Program, Assisting faculty member, 2002 - 2003

"Enhancing the Use of Technology in the College Mathematics Classroom for K - 8 Education Majors at Western Oregon University," Burton, PT3 Grant—WOU, January 28, 2002

“Integrating Technology into K-8 Teacher Preparation,” Schepige, PT3 Grant—WOU, Burton: Critical LAS faculty member, January 28, 2002

PRESENTATIONS

Conference Sessions Organized

“MAA Session on Curriculum Materials for Preservice Middle School Mathematics Teachers,” Burton lead organizer, Fung and Kruczek co-organizers, sponsored by COMET, AMS/MAA Joint Winter Meetings, San Diego, CA, January, 2008

“MAA Session on Content Courses for the Mathematical Education of Middle School Teachers,” Burton lead organizer, Fung and Kruczek co-organizers, sponsored by COMET, AMS/MAA Joint Winter Meetings, New Orleans, Louisiana, January 5, 2007

"MAA Session on Professional Development Programs for K--12 Teachers," Burton co-organizer, sponsored by COMET, AMS/MAA Joint Winter Meetings, San Antonio, Texas, January 11 and 12, 2006

"Math A Rama," A round robin event with 19 workshop presentations created by Preservice or Newly Inservice Teachers, Northwest Mathematics Conference for K- 12 Teachers, Portland, Oregon, October 14, 2005

Professional Presentations

“Fraction and Decimal Games," five-year combined Northwest Mathematics Association for Two Year Colleges Annual Conference, Skamania, Washington, April, 2011

“Active Learning Approaches for the Foundational Mathematics for Elementary Teachers Courses, “ four hour mini-course, AMS/MAA Joint Mathematics Meetings, San Francisco, CA, January 15 & 16, 2010

“Mathematics for Elementary Teachers: Using Virtual Manipulatives,” Mathfest MAA Conference, Portland, Oregon, August, 2009

“Fraction Bar Fun,” Northwest Mathematics Conference, Portland, Oregon, October 2008

“Mathematics for Elementary Teachers: Resources and Class Organization Ideas”, Oregon Mathematics Association for Two Year Colleges Annual Conference, Lincoln City, Oregon, April, 2008

“Visual College Algebra for Middle School Teachers”, AMS/MAA Joint Winter Meetings, San Diego, CA, January, 2008

“Western Oregon University's Middle School Mathematics Focus,” Burton, Fung and Kruczek, AMS/MAA Joint Winter Meetings, New Orleans, Louisiana, January 5, 2007

“Visual College Algebra for Teachers,” Burton and Fung, AMS/MAA Joint Winter Meetings, Atlanta, Georgia, January 6, 2005

“A Glimpse at Adjusting Two Mathematics Education Courses to Deepen Student Understanding at Western Oregon University,” Burton and Fung, AMS/MAA Joint Winter Meetings, Atlanta, Georgia, January 7, 2005

“Using Visual Algebra Pieces to Model Algebraic Expressions and Solve Equations,” five-year combined Northwest Mathematics Association for Two Year Colleges Annual Conference, Skamania, Washington, April 21, 2006

“Math for Elementary Teachers: Classroom Activities for Children,” Oregon Mathematics Association for Two Year Colleges Annual Conference, Lincoln City, Oregon, April 22, 2005

“Secret Codes in the College Classroom,” Oregon Mathematics Association for Two Year Colleges Annual Conference, Lincoln City, Oregon, April 22, 2004

“Taking the Middle School Mathematics Praxis Exam,” Teachers of Teachers of Mathematics Annual Conference, Bend, Oregon, September 5, 2003

“Math Art Posters,” Oregon Mathematics Association for Two Year Colleges Annual Conference, Lincoln City, Oregon, April 25, 2003

“Working with Preservice and Inservice Mathematics Teachers,” Burton, Kralovec and Shaughnessy, TOTOM / PNW Project NExT Section joint session, Portland, Oregon, June 19, 2002

“Math 211/212/213 Strategies and Sharing Session,” organizer: Burton, WOU Presentation: Burton, OCEPT Showcase, Forest Grove, Oregon, February 22, 2002

“Preparing Middle Level Mathematics Teachers: A Collaboration of Three Universities,” Burton and Enneking, Invited workshop presentation for the National Summit on the Mathematics Education of Teachers and The Conference Board of Mathematical Sciences, Tysons Corner, VA, November 3, 2001

“Abstract Algebra for Elementary Education Majors,” Curriculum work presentation, OCEPT Showcase, Salem, Oregon, June 20, 2001

“On the Complexity of Computing Syzygies: D. Bayer and M. Stillman,” paper presentation, Burton and Hering, Rocky Mountain Mathematics Consortium, Laramie, Wyoming, July 2, 1999

“Active Learning in Three Classes: A tripartite, semi-theatrical presentation on teaching Abstract Algebra,” Belcastro, Burton and McDermott, AMS/MAA Joint Winter Meeting, San Antonio, Texas, January 1999

“Using Real World Scenarios to Engage Students in Active Learning,” Fall Faculty Meeting, Central Washington University, Ellensburg, Washington, September 1998

“Techniques of Assessing Calculus Students’ Progress,” Mathematical Association of America MATHFEST, Toronto, Canada, July 1998

“Using Portfolios and Written Evaluations for Assessment in the Mathematics Course,” Eighth Annual Higher Education Assessment Conference, Spokane, Washington, May 1997

“V-Valuations and V-Monoids,” AMS/MAA Joint Winter Meeting, Orlando, Florida, January 1996

“Totally Ordered Abelian Groups,” Symposium for Graduate Study in Science for Undergraduate Women, Oregon State University. October 1995

TEACHER WORKSHOPS

Faculty mentor: "Circling Around Geometry" Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, 2012

Faculty mentor: "Math Art Quilts" Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, 2011

Faculty mentor: "Puzzles Session" Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, 2009

Faculty mentor: "Games Session" Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, April 5, 2008

"Teacher Resource Session: Visual Algebra," Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, April 9, 2007

“Hands-On Fractions and Decimals: Models and Games,” Invited Workshop, Oregon Mathematics Leaders, McMinnville, Oregon, August 8, 2006

“Teacher Resource Session: Math History in the Classroom” Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, Oregon, April 9, 2006

“Hands-On Fraction and Decimal Concepts Models and Games,” Burton and Kruczek, Invited Workshop, Future Teachers Conference, Linn Benton Community College, Albany, Oregon, March 4, 2006

“Secret Messages from the Past,” Sonia Kovalevsky Mathematics Day for High School Girls, Western Oregon University, April 9, 2005

“Secret Codes in the K - 12 Classroom / Research Connections to Active Learning,” Invited Workshop, Oregon Math Leaders, McMinnville, Oregon, August 9, 2004

“Gathering and Effectively Using Manipulatives in the Classroom,” Invited Workshop, Burton and Fung, Future Teachers Conference, Linn Benton Community College, Albany, Oregon, February 21, 2004

“The Poster Art of Clock Arithmetic, Reflections, Rotations & More,” Northwest Mathematics Conference, Portland, Oregon, October 11, 2002

“Activities for the Middle School Classroom,” Burton and Kralovec, Northwest Mathematics Conference, Portland, Oregon, October 10, 2002

“The Poster Art of Clock Arithmetic,” Northwest Mathematics Conference, Bellevue, Washington, October 13, 2001

LOCAL PRESENTATIONS

“Fibonacci Patterns,” Invited Workshop, Santiam Girl Scouts Summer Camp, Western Oregon University, June 23, 2004

“How to Succeed in Mathematics,” Invited Address, New Student Week, Western Oregon University, September 2001, 2002, 2003 and 2005

“Mathematics Session,” Invited Workshop, Middle School Girls' Summit, Western Oregon University, February 23, 2002

“Mathematics Session,” Invited Workshop, Middle School Girls' Summit, Western Oregon University, March 3, 2001

PROFESSIONAL SERVICE

Mathematics Community / Public Service

Member “Committee on the Mathematical Education of Teachers,” Mathematical Association of America, 2004 – 2009

Member “Pacific Northwest Mathematics Conference Planning Committee,” Fall 2004 – Fall 2005

APPOINTMENTS AND AWARDS

Certificate of Recognition “Significant collaboration between the College of Education and the College of Liberal Arts and Sciences in K – 8 Mathematics Education,” Burton, Fung and Schepige, WOU, February, 2007

Certificate of Recognition “In appreciation of significant contributions to the success of Students with Disabilities at WOU,” October, 2005

President: Teachers of Teachers of Mathematics, also organizer of September 2005 annual conference at Western Oregon University, 2004 - 2005

OCEPT Math Team Middle School Strand Co-Leader, 2001 - 2002

OCEPT Fellow, 2001 – 2002 and 2000 - 2001

Project NExT Fellow, Class of 1997-1998

INTERNET ACTIVITIES

Teachers of Teachers of Mathematics Webmaster, July 2002 to present

MAA Contributed Paper Session: Content Courses for the Mathematical Education of Middle School Teachers—Talks, Handouts and URLs Web Site, Webmaster and designer

Math 211/212/213 Strategies and Sharing Web Site, Webmaster and designer

Western Oregon University Mathematics Department Web Site, Webmaster, January 2002 to June 2006

Project NExT Peach Dot Listserv Manager, 1997 to present

MEMBERSHIPS

Mathematical Association of America

National Council of Teachers of Mathematics

Oregon Council of Teachers of Mathematics

Teachers of Teachers of Mathematics