
Joe Champion

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Curriculum Vitae

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◆ Education

Doctoral Student in Educational Mathematics, University of Northern Colorado		
Advisor: Robert Powers	GPA: 4.0	2006-Present
Expected Graduation: Spring 2010		
Doctoral Student in Mathematics, Oregon State University		
Advisor: David Finch	GPA: 4.0	2003-2004
M.S. in Mathematics, University of North Dakota		
Advisor: Joel liams	GPA: 4.0	2001-2003
B.S. in Mathematics, University of North Dakota		
Summa cum Laude, Phi Beta Kappa	GPA: 3.82	1999-2001
Minor: Chemistry		

◆ Professional Teaching Experience

Graduate Teaching Assistant in Educational Mathematics, University of Northern Colorado		
Classes Taught: 12		2006-2009
▪ Discrete Mathematics (1 section)		
▪ Calculus II (1 section)		
▪ Calculus I (1 section)		
▪ College Algebra (5 sections)		
▪ Fundamentals of Mathematics I: Numbers & Operations (2 sections)		
▪ Modeling in Middle Level Mathematics Teaching, (co-instructor, 1 section)		
▪ Algebra in Middle Level Mathematics Teaching, (co-instructor, 1 section)		
Senior Lecturer in Mathematics, University of North Dakota		
Classes Taught: 15		2004-2006
▪ Calculus I (2 sections)		
▪ Applied Calculus I (4 large sections of about 125 students; 1 regular section)		
▪ College Algebra (1 section)		
▪ Pre-calculus (6 sections)		
▪ Intermediate Algebra (1 large section)		
Graduate Assistant in Mathematics, Oregon State University		
Classes Taught: 10		2003-2004
▪ College Algebra (8 recitation sections)		
▪ Differential Calculus (2 regular sections)		
Graduate Teaching Assistant in Mathematics, University of North Dakota		
Classes Taught: 9		2001-2003
▪ Applied Calculus I (2 sections)		
▪ College Algebra (7 sections)		

◆ Professional Research Experience

Research Assistant, Mathematics Teacher Leadership Center, University of Northern Colorado
Full-time NSF grant-funded graduate research assistantship 2009

- Teaching observations and interviews with 11 secondary teachers (\approx 150 hours)
- Design and development of www.mathtlc.org
- Analysis of applicant data in the Math TLC master's program

Summer Graduate Research Assistant, University of Northern Colorado
Under direction of R. Powers, S. Fitchett, and A. Dzhamay 2007-2008

- Literature review for a study of the TI-Navigator in College Algebra
- Analysis of mathematics placement data
- Curriculum analysis for three Calculus texts under department consideration

◆ Related Work Experience

Online Course Developer, Mayville State University, Mayville, North Dakota
Course design and implementation of online shell for Calculus I-III 2009

◆ Research Interests

- Mathematics self-efficacy and calibration in preservice secondary mathematics teachers
- Design, best-practices, and effects of technologies in mathematics teaching and learning
- Reform-based online mathematics tools, especially virtual manipulatives and mathlets
- Social cognitive theory and its application to issues in mathematics education

◆ Publications

Fitchett, S., Champion, J., & King, K. (submitted). Outcomes of math placement at the University of Northern Colorado: An analysis of advising and enrollment data. *Problems, Resources, and Issues in Mathematics Undergraduate Studies*.

Champion, J., Parker, F., Wheeler, A., & Mendoza-Spencer, B. (in press). College algebra students' attitudes towards mathematics in their careers. *International Journal of Science and Mathematics Education*.

Champion, J. (2009). Self-efficacy, calibration, and exam performance in College Algebra and Calculus I. *Proceedings of the Twelfth Special Interest Group of the Mathematical Association of America on Research in Undergraduate Mathematics Education*. Retrieved from <http://mathed.asu.edu/crume2009/proceedings.html>

Powers, R., & Champion, J. (2008). Teaching and learning college algebra with the TI-Navigator wireless handheld network. *Proceedings of the Twentieth International Conference on Technology in Collegiate Mathematics (ICTCM)*.

◆ Selected Presentations

College mathematics in the first year: Advising, student enrollment, and course success
Research presentation with K. King April, 2009
4th Annual College of Natural & Health Sciences Student Research Celebration, UNC

Self-efficacy, calibration, and exam performance in college algebra and calculus I Conference on Research in Undergrad. Math. Education, Raleigh, NC	February, 2009
Modeling marital interaction with coupled difference equations Research presentation with N. Wakefield MAA Rocky Mountain Section Meeting, Black Hills State University	April, 2008
College algebra students' accuracy in predicting their exam performance UNC Research Day, University of Northern Colorado	April, 2008
Teaching and learning college algebra with the TI-Navigator wireless handheld network Workshop and research presentation with R. Powers International Conference on Technology in Collegiate Math., San Antonio, TX	March, 2008
Using the TI-Navigator network of graphing calculators in college algebra Research presentation with B. Mendoza-Spencer & R. Powers Joint Meeting of the AMS and MAA, San Diego, CA	January, 2008
The inverse of the open box problem MAA Rocky Mountain Section Meeting, CSU- Pueblo	April, 2007
A variation on the open box problem Mathematics Colloquium, University of North Dakota	February, 2006
A North Dakota population activity Annual Meeting of the NDCTM, Jamestown, ND	April, 2005
Probability and counting for middle school teachers Math and Science Academy, Mayville State University	June, 2004
Conics in finite projective planes Mathematics Colloquium, University of North Dakota	April, 2003

◆ Technology

Web Design and Development

Advanced in coding HTML with CSS, templates, embedded external content
Proficient in Dreamweaver, vector graphics, JavaScript coding, and batch file-processing

Mathematica

Advanced in module-based programming, plotting and interactive Manipulate commands
Developing in creation of online manipulatives through Java-based LiveGraphics3D

LaTeX

Proficient in typesetting exams, activities, long-documents, and slideshow presentations

R (S plus)

Proficient in coding R-scripts for statistical analysis, data processing, and modeling

Online Education

Advanced in course management systems, including Blackboard and Moodle
Advanced in set-up and use of webcams, digital writing tablets, and document cameras

Adobe Flash with ActionScript 3.0

Proficient in customizing Flash-based mathlets for educational uses

Proficient in coding object-oriented simulations of biological models

Dynamic Geometry

Proficient in Geometer's Sketchpad and GeoGebra for drafting and activity creation

Graphing Calculators

Advanced functional understanding of TI programmable calculators (TI-83 and up)

Advanced in set-up and use of TI-Navigator handheld network in algebra and calculus

Spreadsheets

Advanced in Microsoft Excel, including cell functions, data analysis, and macros

◆ Service to the Profession

Mathematics Graduate Student Representative, UNC

Mathematical Sciences Ph.D. Committee (Student Member) 2008-2009

Search committee for a tenure-track mathematics education position (Member)

Mathematics Student Teacher Supervisor, UNC

Observation and evaluation of 2 secondary mathematics student-teachers 2007

Website Development

Updates to design of UNC School of Mathematical Sciences site 2007-2009

Course websites for Calculus, College Algebra, Numbers & Operations

Design and management of website for Las Chicas de Matemáticas math camp for young women (with H. Soto-Johnson and C. Craviotto)

Mathematics Tutor, UNC

Undergraduate tutoring in the Math Lab (1 hour/week) 2006-2007, 2009

High School Mathematics Competitions

UNC Math Contest (grader) 2007

Forks Area Math Track Meet (test-writer, Grade 9-10 individual test) 2004-2005

◆ Seminars, Professional Development, and Working Groups

Mathematics Technology Group 2009

Weekly graduate student seminar (organizer and facilitator)

Mathematics Teacher Leadership Center Seminar 2009

Weekly seminar with NSF Math and Science Partnership stakeholders

Elementary Mathematics Teaching Coordination Seminar 2008

Weekly meetings of elementary mathematics course instructors

Algebraic Topology Seminar

Weekly graduate student seminar 2008

Conference on Teaching with Technology: The TI-Navigator and TI-Nspire

Professional development training with K-12 educators (one day) 2007

Integrable Systems Seminar		
Weekly graduate student seminar		2007
College Algebra Teaching Coordination Seminar		
Weekly meetings of introductory college math instructors		2006-2007
Reasoning and Proof Seminar		
Weekly graduate student seminar		2006
Elliptic Curves Reading Group		
Weekly faculty working group		2004-2006

◆ Awards and Scholarships

Award for Outstanding Teaching by a Graduate Student		
School of Mathematical Sciences, University of Northern Colorado		2009
Certificate of Appreciation for Teaching		
First Year Scholars Recognition Reception, University of Northern Colorado		2008
Faculty Star Award		
Annual Presidential Scholars Meeting, University of North Dakota		2006
Nominated for Outstanding Undergraduate Teaching Award (Individual)		
Supported by Mathematics Department, University of North Dakota		2005
Ron and Ann Bzoch Scholarship		
University of North Dakota Mathematics Department		2002-2003
NSF Computer Science, Engineering, and Mathematics Scholarship		
University of North Dakota		2000-2001

◆ Professional Memberships

National Council of Teachers of Mathematics		
Graduate Student Member		2007-present
Mathematical Association of America		
Graduate Student Member		2007-present
North Dakota Council of Teachers of Mathematics		
Member		2005
American Mathematical Society		
Graduate Student Member		2001-2003