

Catherine Finlayson Reed
Associate Professor
Department of Education
California State University, East Bay
catherine.reed@csueastbay.edu

EDUCATION

- Ph.D.** August, 2001. Educational Psychology-Gifted with an additional concentration in Mathematics Education, Curry School of Education, University of Virginia, Charlottesville, VA
Dissertation Title: *Predicting the Calculus Level Selected by High-Performing High School Females: A Discriminant Analysis*
- M.A.** May, 1972. German Linguistics, San Jose State University, San Jose, CA
Thesis Title: *Eine Syntaktische Analyse der Modernen Poesie: Vier Gedichte von Heissenbüttel*
- Secondary Teaching Credential.** July, 1967. Claremont Graduate School and University Center, Claremont, CA
Certified in Mathematics, Economics, and German; Additional endorsements in Latin and Gifted Education
- B.A.** June, 1966. German Literature, Pomona College, Claremont, CA

PUBLICATIONS

- Tomlinson, C.A., and Reed, C. (Guest Eds.) (2007). *New England Mathematics Journal XXXIX(2)*. Keene, NH:Keene State College.
- Reed, C.F. (2007) Differentiation in Algebra I: A Tiered Graphing Lesson . *New England Mathematics Journal XXXIX(2)*.
- Reed, C. (2007). We Can Identify and Serve ESOL GATE Students: A Case Study. *Gifted Child Today 30(2)*. Waco, TX: Prufrock Press.
- Holz, H.J., Applin, A., Haberman, B., Joyce, D., **Reed, C.**, and Purchase, H. (2006). Research Methods in Computing: What are they, and how should we teach them? *ITiCSE-WGR '06: Working group reports on ITi CSE on Innovation and Technology in Computer Science Education*, pp.96-114. ACM Press: New York. (ISBN 1-59593-603-3).
- Hofmann, K., **Reed, C.**, and Holz, H.J. (2006). Unobtrusive Data Collection for Web-Based Social Navigation. In Weibelzahl, S. & Cristea, A. (Eds.), *Proceedings of Workshops held at the 4th International Conference on Adaptive Hypermedia and Adaptive Web-Based Systems (AH2006)*. *Lecture Notes in Learning and Teaching*. pp.570-575. Dublin: National College of Ireland. (ISSN 1649-8623).
- Holz, H.J., Hofmann, K., and **Reed, C.** (2006). Unobstrusive User Modeling for Web-Based Systems. *International Journal of Pattern Recognition and Artificial Intelligence (IJPRAI): Special Issue on Personalization Techniques for Recommender Systems and Intelligent User Interfaces*, 21(2) World Scientific Publishing Co. (ISSN 0218-0014).
- Hofmann, K., **Reed, C.**, and Holz, H.J. (2006). Unobtrusive Data Collection for Web-Based Social Navigation. AH'06 Workshop Social Navigation and Community-Based Adaptation Technologies.
- Holz, H.J., Hofmann, K., and **Reed, C.** (2006). Unobstrusive User Modeling for Adaptive Hypermedia. *International Journal of Pattern Recognition and Artificial Intelligence*. World Scientific Publishing Co.

- Reed, C.F. (2005). Mathematically Gifted in the Heterogeneously Grouped Mathematics Classroom. In Susan K. Johnsen & James Kendrick (Eds.), *Math Education for Gifted Students* (pp.17-31). Waco, TX: Prufrock Press.
- Reed, C.F. (2005). What Goes Up Must Come Down. In C.A. Tomlinson & C. Strickland (Eds.), *Differentiation in Practice, Grades 9 – 12* (pp.250-284). Alexandria, VA: ASCD.
- Henry, T., Holz, H.J. Steinback, C, **Reed, C.** & Baid, A. (2004). *A General Model for Student Retention and Recruitment in Computer Science Programs*, Proceedings of the 2004 Frontiers in Education Conference.
- Reed, C.F. (2004). Mathematically Gifted in the Heterogeneously Grouped Mathematics Classroom: What is a Teacher to Do? *Journal of Secondary Gifted Education*, 15(3).
- Reed, C.F. (2002) Predicting Gifted Females' Choice of Calculus Level. *Research Briefs, 2002 NAGC National Conference*.
- Reed, C.F., Dickinson, G, & Cuzzo, C.C. (2000). Middle level catchers in the rye: The unique emerging identity among middle school teachers. *Research in Middle Level Quarterly*, 23(1).
- Reed, C.F. (1999). Put to the test: An educator's and consumer's guide to standardized testing. Review in *The American School Board Journal*, 186(9).
- Reed, C.F. (1999). Why national standards and tests? Politics and the Quest for Better Schools. Review in *The American School Board Journal*, 186(10).

BOARD MEMBERSHIPS

- California Mathematics Council-North. Co-chair of Pre-service Teacher Strand, 2007 - present.
- RAAMP Charter Academy for Mathematics and Science. Member of the Board, 2008 – 2009.

PRESENTATIONS AND PARTICIPATION

- California Mathematics Council-North. Presenter at the December, 2008 annual conference; Asilomar, CA; with a repeat of *Improve Your Students' Test Scores!*
- California Mathematics Council-North. Presenter at the December, 2008 annual conference; Asilomar, CA; CAMTE session *BPEP Program – Inception and Results to Data*.
- California Mathematics Council-South. Presenter at the November, 2008 annual conference; Palm Springs, CA; CAMTE session *BPEP Program – Inception and Results to Data*.
- California P-16 Collaboration and Student Success Conference: Student Achievement and Educational Equity Through Regional Collaboration. Panel Member for MSTI Initiatives. June, 2008.
- Grayslake Differentiation Conference. Presented 6 workshops in mathematics differentiation for Middle School and High School teachers, June, 2008.
- California Mathematics Council-North. Presenter at the December, 2007 annual conference; Asilomar, CA; *Improve Your Students' Test Scores!*
- MESA Academy for Science and Mathematics Educators. Co-presenter at the August, 2007 conference; San Ramon, CA; *Playing with Virtual Fractions*.

- California Association for Gifted Children. Presenter at the March, 2007 annual conference; Santa Clara, CA; Presenter of 2 talks: *Curriculum for a Crowded World* and *A Differentiated Algebra I Lesson and Discussion*.
- California Mathematics Council-North. Presenter at the December, 2006 annual conference; Asilomar, CA; December, 2006. *Games Galore!*
- California Mathematics Council-North. Presenter at the December, 2005 annual conference; Asilomar, CA; December, 2005. *A Differentiated Algebra I Graphing Lesson and Discussion*.
- California Association for Gifted Children. Presenter at the February, 2005 annual conference; Sacramento. Presenter of 2 talks: *Making Sense of Fractions, Decimals, and Percents* and *We Can Identify and Serve ESOL Gifted Students: A Case Study*.
- Mt. Diablo Unified School District. Presenter at Middle School Conference, Sept. 2004. *Making Sense of Number Sense*.
- Grounding Student Retention and Recruitment in Computer Science Programs in Sound Research Methodology and Data: CSU System-Wide Computer Science Workshop. Presenter at the first workshop; April, 2004. *Recruitment and Retention in Computer Science: Designing Research*.
- National Science Foundation. Member of the Mathematics Science Partnership Review Panel #11 for the NSF, February, 2004; Arlington, VA.
- National Association for Gifted Children. Presenter at the November, 2003 national conference; Indianapolis, IN *Writing Differentiated Mathematics Lessons for Heterogeneously Grouped Classrooms*.
- National Association for Gifted Children. Presenter at the October, 2002 national conference; Denver, CO *Predicting the Calculus Level of High Performing High School Females: A Discriminant Analysis*.
- Virginia Council of Teachers of Mathematics. Presenter at the March, 2002 annual conference; Manassas, VA *Making Sense of Fractions, Decimals and Percents: A Model Lesson*.
- Alpha Delta Kappa. Speaker for October, 2001 chapter-wide meeting; Fairfax, VA; *Gifted: Educational Questions and Classroom Strategies*.
- Northern Virginia Council of Teachers of Mathematics. Invited Presenter for December, 2000 conference; Woodson High School, Fairfax, VA; *Early Indicators of the Ability to Multiply: Even Kindergartners May Have It!*
- Virginia Council of Teachers of Mathematics. Invited Presenter for March, 2000 annual conference; Norfolk, VA; *The Heterogeneously Grouped Classroom: What's a Teacher to Do?*
- Northern Virginia Council for Gifted/Talented Education. Annual conference; March 6, 1999; Alexandria, VA: *The Why's and How's of Differentiating a Mathematics Lesson*.
- National Association for Gifted Children. Joint presentation at annual conference; November, 1998; Louisville, KY: *Performance Assessment and Gifted Students*.
- James County City Schools. Professional development day for James Blair Middle School teachers and administration; Williamsburg, VA; February, 1998: *Creating Alternative Assessments*.
- Northern Virginia Council for Gifted/Talented Education. Annual conference; March, 1996; Warrenton, VA: *A First Experience in Differentiating A High School Geometry Unit*.

GRANTS

Co-Director (2006 – present) CSUEB Math and Science Teacher Education Initiative (MSTI). Objective is to increase numbers of credentialed high school mathematics and science teachers. Initial new credential pathway called the Bachelor's Plus Early Pathway (BPEP). Current funding in excess of \$200K.

Bechtel Lower Division Transfer Pathway Grant – Evaluator: 2008 – present.

Bechtel Engineering Grant – Evaluator: 2009 – present.

Faculty Support Grant. CSUEB; 2002-2003. Extended dissertation research into the local school districts for the purpose of validating dissertation research instrument with heterogeneously grouped high school females; and evaluating computer science data obtained from dissertation instrument.

EXPERIENCE**Educational Consultant**

RAAMP Charter Academy for Mathematics and Science, Antioch, CA – Aug., 2009

- 2-day training for all teachers for using the mathematics adoption *enVision Mathematics*

KIPP Charter Schools Association, New Orleans, LA – Aug., 2006

- 3 workshops in mathematics for teachers in middle school and in high school.

Staff Development Workshops, Ruston, LA – May., 2006

- 2 differentiation workshops in mathematics for teachers in middle school and in high school.

Oakland Military Institute, Oakland, CA – Mar., 2006.

- 1 day workshop in effecting student engagement in mathematics.

Christina School District, DE – Oct., 2005

- 2 differentiation workshops in mathematics for teachers in middle school and in high school.

American School of London – Sept., 2005

- Differentiation workshop in mathematics for teachers of grades 5, 6 & 7

Mount Diablo Unified School District – school year, 2004-05

- Differentiation workshops in mathematics for teachers of grades 6 & 7
- Differentiation workshops in mathematics for teachers of algebra, grades 8 & 9

Future Business Leaders of America, Reston, VA, on-going

- Created 2 national FBLA examinations for the 2004 FBLA Summer Conference
- Validated prior FBLA national examinations

GollyGee Software, Inc. Reston, VA Fall, 2001.

- Designed lessons included in the Activity Guide that accompanies GollyGee software

Half Hollow Hills School District, Half Hollow Hills, NY; Fall, 2001

- Conducted differentiation workshop for all district high school mathematics teachers

Grosse Pointe Public Schools, Grosse Pointe, MI; Spring, 2000.

- Conducted workshops in differentiation techniques for high school mathematics teachers

University Level

Assistant Professor, Department of Teacher Education, California State University, Hayward; 2002-present

Instruct TED 5350 – Curriculum and Instruction Elementary Mathematics Methods
 TED 5351 – Foundations of Educational Psychology
 TED 6010 – Teaching and Learning of Mathematics
 TED 6020 – Graduate Research
 TED 6021 – Diagnosis and Remediation of Learning Difficulties in Mathematics
 TED 6030 – Seminar in Problem Solving
 TED 6040 – Advanced Curriculum for Mathematics Teachers
 TED 6901 – Graduate Synthesis

Supervise Multiple Subjects Teaching Credential Candidates

Created 4 new courses in Gifted Education – accepted May, 2003:

- TED 7954 Introduction to Gifted and Talented
- TED 7955 Models for Gifted Education
- TED 7956 Social and Emotional Needs
- TED 7957 Differentiation for the Gifted

Teacher Performance Assessor Trainer – final calibration Feb., 2004.

Adjunct Faculty, Department of Continuing Education, University of Virginia; February, 1998 – 2002

Instruct the following courses designed to foster the National Council of Teachers of Mathematics standards in conjunction with the State of Virginia’s Standards of Learning. Primary focus is on developing a context for teaching required materials using constructivist methods. Secondary focus is on supporting specific needs identified by course participants:

- Teaching and Learning Algebra: Meeting the Challenge of “Algebra for Everyone”
- Teaching Patterns, Functions, and the Algebra SOL Strand
- Teaching Patterns, Functions, Graphing and the Pre-Algebra SOL Strands

Instruct the following courses, designed to meet State of Virginia requirements for credential endorsement in Gifted Education:

- Introduction to the Gifted and Talented
- Methods and Strategies for Teaching the Gifted
- Introduction to Curriculum for the Gifted
- Differentiation and Managing Instruction for Gifted Learners in the Regular Classroom

University Supervisor, Curry School of Education, University of Virginia; September, 1997- May, 1998

- Supervised six secondary Spanish and French language student teachers
- Assisted teaching the pre-service elementary mathematics methods course

Community College

De Anza Foothill Community College System, Cupertino, CA; September, 1981 - May, 1984

- Part-time mathematics instructor teaching Re-entry Mathematics and College Algebra
- Worked with learning disabled and multiply-handicapped students in heterogeneous classes

Gifted and Talented Resource Specialist and Mathematics Coach

Fairfax County Public Schools, Fairfax, VA at the middle school level; September, 1999 - 2002

- Identifying gifted students from culturally diverse backgrounds
- Training teachers in the recognition of gifted traits presented by language minority and culturally diverse students
- Developing differentiated curricula
- Training teachers in development and delivery of differentiated instruction
- Modeling and teaching differentiated lessons to heterogeneously grouped classes
- Providing services to identified gifted middle school students
- Modeling standards-based mathematics instruction for beginning teachers
- Providing enrichment to high-end mathematics students in heterogeneously grouped classrooms

High School

Centreville High School, Fairfax County Public Schools, VA; September, 1990 - June, 1997

- Differentiated instruction to meet the needs of learning disabled, multiply-handicapped and gifted within the heterogeneously grouped classroom
- Taught Geometry, Trigonometry, Math Analysis, German I, and Latin I & II

Eisenhower High School, Rialto Unified School District, CA; September, 1970 - June, 1972

- Wrote and implemented the senior-level Survival Mathematics course
- Taught Geometry and Gifted Geometry

Moreno Valley High School, Moreno Valley Unified School District, Sunnymead, CA; September, 1966 - June, 1967

- German I students won 22 of the 24 Level One awards in the Greater Los Angeles Region Modern Language Association contest; May, 1967
- Taught Algebra and German I

Intermediate School

Herndon Middle School, Fairfax County Public Schools, VA; September, 1989 - June, 1990

- part-time mathematics teacher

Lanier Intermediate School, Fairfax County Public Schools, VA; September, 1986 - June, 1989

- part-time mathematics teacher

University Heights Junior High School, Riverside Unified School District, Riverside, CA; September, 1967 - June, 1969

- Mathematics Department Chair
- Taught Gifted Algebra and Gifted Geometry

PROFESSIONAL MEMBERSHIPS

Phi Delta Kappa

Secretary, academic years 2003-current, to Chapter 189

Foundation Representative Fall, 2002-05, representing Chapter 189

National Council of Teachers of Mathematics

California Mathematics Council

CMC-N Member of the Board – Preservice Teachers

Alameda Contra Costa County Math Educators

Contra Costa County Association of Science Math Education

Association of Mathematics Teacher Educators

California Association of Mathematics Teacher Educators

PHILOSOPHY OF TEACHING

Teaching is a challenging profession. Developing teaching talent requires carefully sequenced support for the novice and developing teacher. Potential teachers ought to develop a solid foundation in their chosen subject. This foundation should be coupled with pre-service as well as in-service programs of sufficient duration and rigor to allow education students to experience, understand, and develop teaching techniques using constructivist and differentiation methodologies. These methodologies should, themselves, empower an academically diverse community to become independently functioning, life-long learners.

TEACHING INTERESTS

Working with pre-service as well as in-service teachers to develop their skills with heterogeneously grouped classes is my central interest. To this end, I employ a laboratory format that allows exploration in constructivist

methods. I challenge my students to develop an understanding of linguistic and cultural diversity, and to investigate the possibilities that differentiated instruction allow for framing course content, for supporting the processes by which their students learn, and for creating assessments designed to promote demonstration by the student of content mastery.

RESEARCH INTERESTS

Gender equity issues form the core of my research into mathematics. With my background in both qualitative and quantitative research methods, I am now engaged in joint research with faculty from the Department of Mathematics and Computer Science. The research focuses on equity issues with regard to recruitment and retention in CS.