JERE CONFREY

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BUSINESS ADDRESS

Joseph D. Moore Distinguished University Professor
Professor of Mathematics Education
William and Ida Friday Institute for Education Innovation
College of Education
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Raleigh, NC 27606

PERSONAL DATA

Birthplace:	Washington, D.C.
Date of Birth:	December 27, 1951
Spouse:	Dr. Alan P. Maloney, PhD., Biology, Stanford University
Children:	Brian Confrey Mazzarella, December 12, 1981
	Kate Confrey Mazzarella, February 5, 1984
	Tyler Andrew Confrey-Maloney, May 28, 1991

EDUCATION

Ph.D.	Cornell University, Ithaca, New York
1980	Mathematics Education, Research Methodology
	Dissertation: *Conceptual Change, Number Concepts, and the Introduction to Calculus*
M.A.	Cornell University, Ithaca, New York
1978	Curriculum-Instruction, Mathematics Education
B.A.	Duke University, Durham, North Carolina
1973	Mathematics/Philosophy (cum laude)
1972 - 1973	University of Leeds, Leeds, England
	Mathematics/Philosophy (Junior year abroad)

ACADEMIC PROFILE

- Mathematics Education, Urban Education, Educational Technology, Data Driven Decision Making, Philosophy of Science, Diagnostic Assessment, Rational Number Reasoning, Teacher Education

PROFESSIONAL EXPERIENCE

Joseph D. Moore Distinguished University Professor, William and Ida Friday Institute for Educational Innovation, College of Education, North Carolina State University

Director, Generating Increased Mathematics and Science Opportunities (GISMO), Washington University in St. Louis, 2006.

Professor of Mathematics Education Washington University in St. Louis, 2003 - present

Director, Center for Inquiry in Science Teaching and Learning, Washington University in St. Louis, 2004 - 5

Director, Systemic Research Collaborative for Education in Mathematics, Science and Technology, (SYRCE), Department of Curriculum and Instruction, University of Texas at Austin, 1998 - 2003.

Co-Director and Co-Founder, UTeach: A secondary teacher preparation program in Mathematics and Science between the Colleges of Education and Natural Sciences, University of Texas at Austin, 1998 - 2001.

Professor, Mathematics Education, The University of Texas at Austin, 1997 - 2003.

Associate Professor, Mathematics Education, Cornell University, Ithaca, NY, 1990 - 1997.

Assistant Professor, Mathematics Education, Cornell University, Ithaca, NY, 1984 - 1990.

Assistant Professor, Mathematics Education, Mount Holyoke College, South Hadley, MA,
Founder and Director, SummerMath (for young women 9^{th} – 12^{th} grades)
Co-Director, SummerMath for Teachers,1981 - 1984.

Assistant Professor, Mathematics Education, Michigan State University, East Lansing, MI,
Founder, Teacher Education program: IDEAS, 1979 - 1981.

Research Assistant, Institute for Occupational Education
Instructor/Teacher Assistant, Calculus and Remedial Mathematics
Cornell University, Ithaca, NY, 1976 - 1979.

Instructor, Mathematics, Chemeketa Community College, Salem, OR, 1976.

Teacher, Mathematics 9-12, Gervais Union High School, Gervais, OR, 1974 - 1976.

COURSES TAUGHT

Rational Number Reasoning: Constructs, Assessment, and Diagnostic Approaches
Social Science's Position between Science and Humanities and its Implications for Educational Research
Science and Politics of Testing
Foundations of the Learning Sciences: Piaget, Vygotsky and Dewey
Evaluation of Curricula in Mathematics
Analysis of Research in Mathematics and Science Education
Classroom Interactions in Science and Mathematics
Computer Applications in Mathematics Teaching
Elementary Mathematics Methods
Epistemological and Psychological Foundations of Mathematics and Science Research
Introductory Mathematics—Pre-calculus
Mathematics and Gender
Reform Approaches to Algebraic Thinking
Research on Multiplicative Structures and Rational Number
Researching Systemic Reform in Science and Mathematics Education
Special Topics in Social Constructivism

AWARDS AND HONORS

Appointed by National Governors Association to the Common Core Standards Validation Committee, 2009-2010.
Member of NCTM's Research Committee, 2007-10
Invited member International 21st Century Skills Assessment by CISCO, Intel, and Microsoft
Special Recognition for Excellence in Mentoring, Washington University in St. Louis, Spring 2005-6.
Chairperson, National Research Council's Committee on *Review of the Evaluation Data on the Effectiveness of NSF-supported and Commercially-generated Mathematics Curricula*
Member, National Research Council's Committee on *Scientific Research in Education*
International Society of Technology Education (ISTE) NET*S Distinguished Achievement Award for PT3 Project (www.Uteach.utexas.edu/technology/)
Faculty Research Fellowship Award, University of Texas, 2001-2002
United States Member of the International Committee on Mathematics Instruction's Program Committee on Modeling and Applications in Mathematics, 2000-present
Expert Panel of Technology, Department of Education 2000-2002
Committee on Education, American Mathematics Society, 2000-2002
E. Glenadine Gibb Teaching Fellowship in Education, 1997-2000
Vice-Chair Mathematical Sciences Education Board, National Academy of Sciences, 1998- present
Invited Member of the Strategic Planning Task Force #4--Creating the Faculty of the Future, 1997
Vice President of the International Group for the Psychology of Mathematics Education, 1994-1996
Invited Member of the Select Committee on Mathematical Sciences at the University, 1995
Invited Member of the Select Committee on the Evaluation of Teaching, 1996
Member of the U.S. Delegation to China-Japan-U.S. International Math Exchange, 1993
Invited Member the Provost's Commission on Undergraduate Education, 1987-1989
Attendee 1988 Gordon Conference: "The Second Cybernetics"
Presenter 1986 Gordon Conference: "The Cybernetics of Cognition"
Teacher Incentive Grant Recipient, 1975
Phi Kappa Phi, 1980
Sigma Xi, 1981
Sage Graduate Fellowship, 1979
Cornell Summer Fellowship, 1978

GRANTS

- Qualcomm Foundation. *Wireless Learning Progress Profiles Synchronized for Rational Number Reasoning with Socially Networked Wireless Devices.* PIs Jere Confrey and Alan Maloney. $400,000. March 2010-February 2011. (pending)

- National Science Foundation: Supplemental Award for *Diagnostic E-Learning Trajectories Approach (DELTA) applied to Rational Number Reasoning for Grades 3-8*. PIs Jere Confrey, Mark Wilson. $324,947. July 2009-August 2012.

- North Carolina MSP: North Carolina Integrated Mathematics, NC Department of Public Instruction $325,000 September 07- June 2010

- National Science Foundation: *Diagnostic E-Learning Trajectories Approach (DELTA) applied to Rational Number Reasoning for Grades 3-8*. PIs Jere Confrey, Mark Wilson, and Lawrence Berger. Award amount $1,653,384 (September 2007 – August 2012)

- Bill and Melinda Gates Foundation *A study of science-math-engineering-technology (SMET) academies serving students from populations under-represented in these fields.* (with Barbara Means, Stanford Research Institute) (under final negotiation)

- Boeing Corporation *St. Louis Regional Mathematics Intiative: Diagnostic E-Learning Trajectories Approach.* PIs Jere Confrey and Victoria May. Award amount $100,000 (October 2006- September 2007)

- National Science Foundation: *Promoting Understanding of Trigonometry for Technologically-Reliant Career Trajectories* Award amount $441000 (Grant Number REC 0531120, June 2005 – December 2006).

- National Science Foundation *Synthesis of Rational Number Reasoning for Urban Schools*. Award Amount $141,248 (REC 0635489 Grant ’06-07).

- National Science Foundation *LIONS: Local Investigations of Natural Science*. Co-PIs with Robert Coulter, Missouri Botanical Garden. Award amount $684,529 (Grant ESI 0639638 October 2006-9)

- National Science Foundation *Collaborative Proposal for Technology for Improving Laboratory Experiences in Advanced Technology* Co-PI with Jonathan Turner, Computer Science Award amount $609,820 (REC 0639638 ’06-09).

- Center for Inquiry in Science Teaching and Learning. A NSF Center for Teaching and Learning. (Grant Number 0227619, Principal Investigator and Director, 2004-5, Total award $10,000,000)

- National Science Foundation: "*Developing a Coherent View of Research-based Urban Systemic Reform in Science and Mathematics Education Using Technology"*. Co-PI with Jill Marshall. An invitational working meeting. Award amount $44,035 (Grant Number REC 0122038; September 2001, February 2002).

- Department of Education: "*Preparing Tomorrow’s Teacher"* Co-PI with Dr. Paul Resta and Dr. Anthony Petrosino. Award amount $269,069, with non-governmental match of $914,912 (Grant Number CR D5900; June 2000 – May 2003,).

- National Science Foundation: "*Collaborative Excellence for Teacher Preparation*" Co-PI with Dr. Michael Marder (Grant Number DUE 9953187 - $1,337,522; April 2000 - 2003).

- National Science Foundation: "*Promoting Understanding of Trigonometry for Technologically-Reliant Career Trajectories*" (Grant Number REC 9903419 - $741,000; June 1999 – September 2003).

- National Science Foundation*: "Systemic Research and Design Center in Mathematics, Science and Engineering*" (Grant Number ESR 9816023 - $1,920,130.00; June 1999 - June 2003).

- National Science Foundation*: "Building Mutimedia Pre-Calculus*" (Grant Number ESI 9705623 - $316,615.00; August 1997 – 2000).

- Intel Corporation: "*Equipment Grant* " $66,589; January 2000; $45,000; December, 2001 (first ever research award to a College of Education faculty member).

- National Science Foundation: "*Planning Grant for a Center for Systemic Reform in Science, Mathematics and Technology"* (Grant Number ESR-9725522 - $135,000; October 1997 - September 1998).

- National Science Foundation: "*Algebra by Design"* (Grant Number RED-9453876 - $999,992; June 1995-May 1998).

- Dwight D. Eisenhower Title IIA Higher Education Competitive In-service-"*Training in Mathematics and Science"* Joint grant with David Henderson, Department of Mathematics (Grant Number 132-93-0022 - $54,447; July 1993 - June 1994).

- National Science Foundation: "*Splitting, Similarity and Rate of Change: New Approaches to Multiplication and Exponential Function"* (Grant Number MDR-9053590 - $1,100,000; April 1991 - September 1994).

- Apple Corporation: "*Mathematics Teacher Development Using Function Probe*" (Equipment and $13,450; 1989-1990).

- National Science Foundation: "*Exploratory Research on Student Understanding of Exponential Functions: Instruction Using Multiple Representational Systems"*. Co-PI. (Grant Number MDR-8652-160 - $508,061; September 1988 - May 1990).

- Apple Corporation: "*Apple Classrooms of Tomorrow: Student-Centered Software for Quantitative Competence*" (Grant Number R00147 0005 - $125,000; October 1988 - August 1990).

- Apple Corporation: "*External Research"* Equipment Grant (September 1988).

- MacEd Center, Cornell University: "*Equipment Grant"* (January 1988).

- Exxon Foundation: "*Programming Support*" $30,000 (in cooperation with Department of Mathematics, Cornell University; October 1987 - September 1988).

- Apple Corporation: "*Problem Solving Capability Enhancement for Students of the New York State College of Agriculture and Life Sciences at Cornell*". Equipment Award for a grant written with G. Rehkugler and R. Cooke (July 1986).

- Hatch Proposal: "*An Examination of the Influence of Certain Affective Factors on Student Misconceptions in Mathematics"* (September 1985 - September 1988).

- Dodge Foundation: to develop a "*Teacher Education Program"* to run concurrently with the SummerMath program ($30,000 for 1982 and $30,000 for 1983).

- Exxon Foundation: Develop the "*SummerMath Program"* ($25,000; Summer 1983).

- Shell Foundation: Conduct *"Research on the Factors Influencing Young Women's Perceptions of Mathematics*" ($5,000; Summer 1984).

PROFESSIONAL ORGANIZATIONS

National Council of Teachers of Mathematics, 1978 - present
American Educational Research Association, 1978 - present
International Group for the Psychology of Mathematics Education, 1984 – present
Mathematics Association of America, 1993 – 2002
American Association of University Women, 1992 –1998
American Mathematics Society, 1999-2001
International Learning Science Society 2004- present
American Association for the Advancement of Science, 2005- 2007

PROFESSIONAL SERVICE AND CONSULTING ACTIVITIES

Member of Advisory Team for CADRE, Technical Assistance Team for DRK-12 program at NSF, 2009-

Consultant to SRI on Contingent Pedagogies with William Penuel, SRI International, 2009

Advisory Committee for Diagnosing Teachers' Multiplicative Reasoning project, co-PIs Joanne Lobator and Andrew Iszak, University of California, San Diego.

Advisory Committee for Differential Equations Explorer project, coPIs Michelle Zandieh and Chris Rasmussen, San Diego State University.

Consultant to SRI, on Bill and Melinda Gates Foundation Grant on STEM Schools, 2007-9

Consultant to the Bill and Melinda Gates Foundation on Assessment for Mathematics Learning Tour, November 2006

Consultant and Author for Mathematics Materials for VITAL, Channel 13 WNET, 2006-7

Consultant to Wireless Generation and the NY City Public Schools Project ARIS, Development of Progress Maps for grades 6 and 7.

Special Invited Presentation, Effective Mathematics Reform. MasterCard Mathematics Initiative Launch. St. Charles, MO, December, 2006.

Consultant, Math Learning Tour. Presentation on Assessment and School Reform. Bill and Melinda Gates Foundation, Seattle, WA. November 2006.

Consultant, Promise Project, Michigan State University, for Joan Ferrini-Mundy and William Schmidt, August, 2006

Consultant, Stanford Research Institute, DDDM National Survey and Teacher Interview for Barbara Means, August, 2006.

National Advisory Board, Assessing Data Modeling and Statistical Reasoning Project, Richard Lehrer, Vanderbilt University, 2005- present

National Advisory Board, Project VITAL, Public Broadcasting WNET/Thirteen, New York, 2006-present.

National Advisory Board to the Center for the Study of Mathematics Curriculum (CSMC), 2003-present

National Advisory Board in Mathematics to Pearson Digital Learning Project SuccessMaker, 2003-present

Advisory Board to Keith Sawyer, Editor, Cambridge Handbook on the Learning Sciences, 2002-5

MSP Knowledge Management and Dissemination (MSP-KMD) Advisory Board, for Horizons Research

Vice Chairperson, Mathematics Sciences Education Board of the National Academy of Sciences, 1998-2004.

Reviewer: Mathematics Sciences Partnership Research proposals, DOE and NSF, July 2002.

Speaker: Education and Human Resources Advisory Committee, National Science Foundation, May, 2002, Washington D.C.

Advisor to EDC, Margaret Honey and Ellen Mandinach, Multiplicative Reasoning Project and Systemic Theory project

Advisory Committee: Horizon Research and University of Wisconsin, A Study of Systemic Reform. PIs: Iris Weiss and Norm Webb, 1999-2002.

Advisor: Census Microdata for Fathom, Key Curriculum Press, PI William Finzer, 2002.

Reviewer:, *Adding it Up: Helping Children Learn Mathematics*, 2002 National Research Council.

Reviewer: Rand Corporation's publication on Strategic Initiatives in Mathematics Education (www.rand.org/multi/achievementforall/math/reviews/confrey2pdf), July 2002.

Advisor: Mathematics Education Initiatives to Intel, Texas Instruments, Palm, Inc., 2000-2002.

Reviewer: *Educating Teachers of Science, Mathematics and Technology: New Practices for the New Millenium* (2001), National Research Council Report.

Member: State of Texas Committee on Master Teacher Certification, Fall, 2001.

National Advisor: Center for Innovative Learning Technologies (CILT), 2000.

Reviewer/ Coordinator *Designing Mathematics or Science Curricular Programs: a Guide for Using Mathematics and Science Standards (*1999) Center for Science, Mathematics and Engineering Education, National Academy of Sciences.

Expert Panel on Technology, U.S. Department of Education, 1998-2001.

Board Member: National Technology Advisory Board, Milwaukee Public Schools, 1999-present.

Member: Committee on Education, American Mathematical Society, 1998-2001.

Co-Organizer: AERA Division C, Section 4, 1998.

Vice President: International Committee of Psychology of Mathematics Education, 1992-1995.

Advisory Committee: History and Philosophy of Science and Science Teaching Group, 1990-1992.

Invited Advisor: Mathematical Sciences Education Board, National Research Council, 1994 & 1995.

Research Advisor: Project 2061: Research Blueprint, 1994.

Member: Portfolio Study Advisory Panel, NSF, 1993.

Member: Advisory Board for Gateway to Advance Mathematical Thinking, EDC, 1995.

Member: National Science Foundation Review Board, Statewide Systemic Initiatives, 1992-1996.

Panel Review Team: Urban Systemic Initiatives for National Science Foundation, 1994-1996.

Advisory Committee: Center for Collaborative Education of Coalition of Essential Schools (in Mathematics), 1991.

Panel Review Team: Teacher Enhancement, NSF, 1990.

Panel Review Team: NSF Teaching and Learning Division, 1988.

AERA Awards Committee: Distinguished Contributions to Educational Research, 1987-1988.

Coordinator: Working Group on Constructivism for the International Group for the Psychology of Math Education, 1987.

Co-Chairperson: Special Interest Group of Research in Mathematics Education of the American Educational Research Association, 1986-1988.

Invited Critic: Special Interest Group in Mathematics Education, April, 1986.

AERA Awards Committee: Division B, 1984-1985.

EDITORIAL BOARDS AND REVIEWING

Member, Editorial Board, *Cognition and Instruction*, 2002-present
Member, Editorial Board, *Journal for Research of Mathematics Education*, 1995-1998
Member, Senior Editor, *International Journal of Computers for Mathematical Learning*, 1995-1998
Member, Editorial Board, *Interactive Learning Environments*, 1990-1996
Member, Editorial Board, *Recherche en Didactique des Mathematiques*, 1989
Member Editorial Board, *Elementary School Journal*, 1981-1986
Reviewer, *Journal of the Learning Sciences*
Reviewer, *Cognition and Instruction*
Reviewer, *Educational Researcher*
Reviewer, *Journal of Research in Mathematics Education*
Reviewer, *Science and Education*
Reviewer, *American Education Research Journal*
Reviewer, *Mathematics Teaching and Teacher Education*
Reviewer, *Journal of Educational Policy and Evaluation*
Reviewer, *Journal of Mathematical Behavior*

DISSERTATIONS CHAIRED

Mojica, Gemma (2009). Preparing Pre-service Elementary Teachers to Teach Mathematics with Learning Trajectories. North Carolina State University, Raleigh, NC

Wilson, P. Holt (2009). Understanding the Effects of a Learning Trajectory for Equipartitioning in Classrooms: A Mixed Methods Investigation. North Carolina State University, Raleigh, NC

Kazak, Sibel (2006). *Investigating Elementary School Students' Reasoning about Distributions in Various Chance Events.* Washington University in St. Louis, St. Louis, MO.

Makar, Katie (2004). *Developing Statistical Inquiry: Prospective secondary mathematics and science teachers' investigations of equity and fairness through analysis of accountability data.* University of Texas at Austin, Austin, Texas.

Wilhelm, Jennifer (2001). *How Students' Understanding of Waves Evolves While Immersed in a Technology-rich, Project-enhanced Environment.* University of Texas at Austin, Austin, Texas.

Rowe, Elizabeth (2000). *The Transition to Algebra: The Crossroads in Math Self-Concept Development.* Cornell University, Ithaca, New York.

Meletiou, Maria Menelaou (2000). *Developing Students' Conceptions of Variation: An Untapped Well in Statistical Reasoning.* University of Texas at Austin, Austin, Texas.

Castro-Filho, Jose Aires (1999). *Teachers, Math, and Reform: An Investigation of Learning in Practice.* Cornell University, Ithaca, New York.

Haarer, Shawn (1999). *Student Reflection and the Use of Software Tools for Recording Student's Actions and Constructing Verbal Models.* Cornell University, Ithaca, New York.

LaChance, Andrea Marie (1999). *Promoting Reform in Mathematics Education by Building Content Knowledge, Technological Skills, and Teacher Community.* Cornell University, Ithaca, New York.

Dennis, David (1995). *Historical Perspectives for the Reform of Mathematics Curriculum: Geometric Curve Drawing Devices and Their Role in an Algebraic Description of Functions.* Cornell University, Ithaca, New York.

Doerr, Helen (1994). *Building Computational Models: An Effective Approach to Constructing Student Understandings,* Cornell University, Ithaca, New York.

Piliero, Susan (1994). *An Investigation of Teacher Knowledge, Beliefs and Practices in the Implementation of a Problem-based Curriculum Using Multi-Representational Software in a Technology-rich Classroom.* Cornell University, Ithaca, New York.

Smith, Erick (1993). *Practice in a Radical Constructivist Setting: The Role of Virtues and Activities in Mathematical Knowing*, Cornell University, Ithaca, New York.

Borba, Marcelo (1993). *Students' Understanding of Transformations of Functions Using Multi-Representational Software.* Cornell University, Ithaca, New York.

Afamasaga-Fuata'i, Karoline (1992). *Students' Strategies for Solving Contextual Problems on Quadratic Functions.* Cornell University, Ithaca, New York.

Rizzuti, Jan (1991). *High School Students' Uses of Multiple Representations in the Conceptualization of Linear and Exponential Functions.* Cornell University, Ithaca, New York.

Millroy, Wendy L. (1990). *An Ethnographic Study of the Mathematical Ideas of a Group of Carpenters.* Published doctoral dissertation, Cornell University, Ithaca, New York. [Journal for Research in Mathematics Education, Monograph 5, 1992]

REFEREED JOURNAL PUBLICATIONS

Maloney, A. P., and Confrey, J., 2010. The Construction, Refinement, and Early Validation of the Equipartitioning Learning Trajectory. 9th International Conference of the Learning Sciences, Chicago (submitted)

Confrey, J., Maloney, A. P., Nguyen, K. H., Mojica, G., & Myers, M. (2009b). Equipartitioning/Splitting as a Foundation of Rational Number Reasoning Using Learning Trajectories. *33rd Conference of the International Group for the Psychology of Mathematics Education*. Thessaloniki, Greece.

Mojica, G., Confrey, J., Maloney, A., Nguyen, K., and Myers, M. 2009. Pre-service Elementary Teachers' Utilization of an Equipartitioning Learning Trajectory to Build Models of Student Thinking. *33rd Conference of the International Group for the Psychology of Mathematics Education*. Thessaloniki, Greece.

Confrey, J., Maloney, A., Nguyen, K. H., Wilson, P. H., Mojica, G., Myers, M., and Pescosolido, R.

(in preparation). A Learning Trajectory for Equipartitioning/Splitting. 60 pp.

Confrey, J, Maloney, A. and Nguyen, K. (December 2008). Breaching the conditions for success for a National Advisory Panel. *Educational Researcher* **37** (9) pp. 631-637.

Battista, M., Boerst, T., Confrey, J., King, K., Smith, M., Strutchens, M, Sutton, J., and Reed, J. (March, 2008). Research Commentary: Situating Research on Curricular Change. *J. Res. Math. Ed.* **39** (2) pp.102-112.

Confrey, J. (2008). Teaching teachers to use data to inform issues of equity and instruction. In Ernest, P. (ed.) *Philosophy of Mathematics Education Journal* Special Issue on Justice. Cambridge University Press

Confrey, J, Maloney, A. and Nguyen, K. (December 2008) Breaching the conditions for Success for a National Advisory Panel *Educational Researcher*.37 (9) p 631-637

Kazak, S. and Confrey, J. () Elementary school students' intuitive conceptions of random distribution in Carmen Batanero, editor, special issue of the *International Electronic Journal of Mathematics Education*.

Shen, J. and Confrey, J. (in press) From conceptual change to transformative modeling: a case study of an elementary teacher in learning astronomy *Science Education Journal* J. Wiley Publishers, Hoboken, N.J.

Confrey, J. (2006). Teaching teachers to use data to inform issues of equity and instruction. *Philosophy of Mathematics Education Journal Special Issue on Justice.* Editor: Paul Ernest. Cambridge, London.

Confrey, J., (November, 2006). Fuzzy Policy, Not 'Fuzzy Math,' Is the Problem A Seven-Point Plan for Strengthening the Instructional Core. Commentary: *Education Week*, November 1, 2006.

Confrey, J. (September, 2006). Comparing and Contrasting the NRC Report on Evaluating curricular Effectiveness with the What Works Clearinghouse Approach (2006) *Educational Evaluation and Policy Analysis*. Fall, *28, (3)* p. 195-213.

Wilhelm, J. and Confrey, J. (2005, December). Designing Project-enhanced environments *The Science Teacher* 72 (9) National Science Teachers Association, Arlington, VA. p. 42-5.

Makar, K. and Confrey, J. (2005). 'Variation-talk': articulating meaning in statistics *Statistics Education Research Journal,* 4 (1) p.

Confrey, J., K. Makar and S. Kazak (2004). Undertaking Data Analysis of Student Outcomes as Professional Development for Teachers *ZDM, 36* p. 1-7.

Confrey J., and Carrejo, D. (2004). Ratio and Fraction: The Difference Between Epistemological Complementarity and Conflict, v1.0 [videopaper]. *Journal for Research in Mathematics Education*, Reston, VA: National Council of Teachers of Mathematics, or Research in Mathematics Education.

Cobb, P., Confrey, J., diCessa, A., Lehrer, R., and Schuable, L. (2003). Design Experiments in Educational Research. *Educational Researcher, 32, (1),* pp. 9-13.

Wilhelm J. and Confrey, J. (2003). Projecting rate of change in the context of motion onto the context of money *International Journal of Mathematics Education in Science and Technology 34*(6) Taylor and Francis, Ltd. p. 887-904.

Confrey, J., Sabelli, N. and Sheingold, K. (2002). A Framework for Quality in Educational Technology Programs. *Educational Technology, 42,* pp. 7-20.

Lehrer, R., Strom, D., and Confrey, J. (2002). Grounding Metaphors and Inscriptional Resonance: Children's Emerging Understanding of Mathematical Similarity. *Cognition and Instruction, 20 (3),* pp. 359-398.

Lachance, A. and Confrey, J. (2002). Helping Students Build a Path of Understanding from Ratio and Proportion to Decimal Notation. *Journal of Mathematical Behavior, 20,* pp. 503-526.

Confrey, J. (2000). Constructivism Revisited and Revised. *Nordisk Mathematik Didaktik 8 (3),* pp. 7-30.

Confrey, J., Castro-Filho, J., and Wilhelm, J. (2000). Implementation Research as a Means to Link Systemic Reform and Applied Psychology in Mathematics Education. *Educational Psychologist 35 (3),* pp. 179-191.

Dennis, D. and Confrey, J. (2000). La Crecion de Exponentes: un Estodio Sobre los Methodos y la Episemologia John Wallis. *Revista Latinoamericana de Investigacion en Mathematic Educativa 3,* pp. 5-31. Mexico City.

Marder, M. and Confrey, J. (2000). UTeach. *Discovery, Research and Scholarship at the University of Texas at Austin,* 15 (4), pp. 6-9.

Smith, E., Haarer, S. Confrey, J. (1997). Seeking Diversity in Mathematics Education: Mathematical Modeling in the Practice of Biologists and Mathematicians. *Science and Education 6, (5),* pp. 441-472.

Confrey, J. and Costa, S. (1996). A Critique of the Selection of "Mathematical Objects" as Central Metaphor for Advanced Mathematical Thinking. *International Journal of Computers for Mathematical Learning, 1, (1),* pp. 39-168.

Borba, M. and Confrey, J. (1996). A Student's Construction of Transformations of Functions in a Multiple Representational Environment. *Educational Studies in Mathematics 31*, pp. 319-337.

Confrey, J. and Doerr, H. (1996). Student Modelers. *Learning Environment Journal 4,* (3), pp. 199-217.

Dennis, D. and Confrey, J. (1996). The Creation of Continuous Exponents: A Study of the Methods and Epistemology of Alhazen and John Wallis. *CBMS: Issues in Mathematics Education, 6, Research in Collegiate Mathematics Education II,* pp. 33-60.

Confrey, J. (1995). A Theory of Intellectual Development, Part III. *For the Learning of Mathematics: An International Journal of Mathematics Education 15, (2),* pp. 36-45.

Confrey, J. (1995). A Theory of Intellectual Development, Part II. *For the Learning of Mathematics: An International Journal of Mathematics Education 15, (1),* pp. 38-48.

Dennis, D. and Confrey, J. (1995). Functions of a Curve: Leibniz's Original Notion of Functions and Its Meaning for the Parabola. *The College Mathematics Journal 26, (2),* pp. 124-131.

Confrey, J. and Smith, E. (1995). Splitting, Covariation and Their Role in the Development of Exponential Functions. *Journal for Research in Mathematics Education 26 (1),* pp. 66-86.

Confrey, J. (1994). A Theory of Intellectual Development, Part I. *For the Learning of Mathematics: An International Journal of Mathematics Education 14, (13),* pp. 2-8.

Confrey, J. and Smith, E. (1994). Exponential Functions, Rates of Change and the Multiplicative Unit. *Educational Studies in Mathematics 26,* pp. 135-164.

Confrey, J. (1994). Voice and Perspective: Hearing Epistemological Innovations in Student Words [French]. *Revue des sciences de l'education 20, (1),* pp. 115-134.

Confrey, J. and Smith, E. (1992). Function Probe: Multi-Representational Software for Learning about Functions. *New York State Association for Computers and Technology in Education 6*, pp. 60-64.

Confrey, J. (1991). Steering a Course Between Vygotsky and Piaget. *Educational Researcher, 20, (8),* pp. 28-32.

Confrey, J. (1990). A Review of the Research on Student Conceptions in Mathematics, Science and Programming. Courtney Cazden (ed.), *Review of Research in Education 16*, pp. 3-56.

Confrey, J. (1986). A Critique of Teacher Effectiveness Research in Mathematics Education. *Journal of Research in Mathematics Education 17, (5),* pp. 347-360.

Confrey, J. (1982). Content and Pedagogy in Secondary Schools. *Journal of Teacher Education, Vol. XXXlll, (1),* pp. 13-16.

Confrey, J. (1982). The Lure of the Practical. *Review Journal of Philosophy and Social Science 7, (1, 2),* pp. 109-138.

Confrey, J. (1981). Concepts, Processes and Mathematics Instruction. For the Learning of Mathematics, *An International Journal of Mathematics Education 2, (1),* pp. 8-12.

Confrey, J. (1981). Conceptual Change Analysis: Implications for Mathematics and Curriculum. *Curriculum Inquiry 11, (3),* pp. 243-257.

Confrey, J., Griffin, G., and Webb, N. (1981). Time to Learn: Review from Three Perspectives. *The Elementary School Journal 82, (1),* pp. 76-94.

Confrey, J. and Lanier, P. (1980). Students' Mathematical Abilities: A Focus for the Improvement of Teaching General Mathematics. *School Science and Mathematics 80,* (7), pp. 549-556.

TECHNICAL REPORTS

STEM High Schools: Specialized Science Technology Engineering and Mathematics Secondary Schools in the U.S. August 29, 2008. Barbara Means, Jere Confrey, Ann House, Ruchi Bhanot. SRI International. A Report to the Bill and Melinda Gates Foundation on the Conduct and Analysis of a Survey of All Specialized STEM High Schools in the U.S.

CURRICULUM AND SOFTWARE AUTHORED

Confrey, J. and Maloney, A. (2007). Eighty Activities, based on Video Clips from *Cyberchase*, and Assessments for Grades 3-6, VITAL Project, WNET/13, for use in all New York State Schools linking standards and Grow Network reports.

Confrey, J. and Maloney, A. (2006) Thirty Five Activities, based on Video Clips from *Cyberchase*, and Assessments for Grades 3-5, VITAL Project, WNET/13,, for use in all New York State Schools linking standards and Grow Network reports.

Confrey, J and Maloney, A. (2006). Graphs N Glyphs, a children's animation software with visible mathematics.

Confrey, J. and Maloney, A. (in preparation) Multimedia Pre Calculus.

Confrey, J. (1991-2002). Function Probe© (v. 2.3.5, 3.0, 4.0, 4.1). Ithaca, NY: Cornell Research Foundation. (Designed with Forrest Carroll and Erick Smith). (Revised 2002 with Alan Maloney and Pedro Larios).

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Piliero, S. and Confrey, J. (1990). The Development of Teacher Knowledge in the Implementation of a Problem-Based Curriculum Using Multi-Representational Software. Written for: Apple Classrooms of Tomorrow, Apple Computer, Inc.

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Confrey, J. (1981). Using the Clinical Interview to Explore Students' Mathematical Understandings. Given at AERA, Los Angeles, CA.

INVITED PLENARY TALKS

Preparing Students for the Mathematical Sciences in the 21st Century. Annual Conference of Research on Undergraduate Mathematics Education, Raleigh, NC. February 28, 2009

Designing Research for Policy Impacts: a Reflection. REESE Program Principal Investigators Meeting, Washington, DC. February 18-19, 2009

The Mathematical Sciences and Twenty-first Century Skills: a Three Part Proposal for Coordination. Leadership Conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC. October 28, 2008

Engaging in Reasoning about 21st Century Mathematics: a New Approach to Rational Numbers. Annual Conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC. October 30, 2008

Learning Trajectories and Rational Number Reasoning. Brown Bag Seminar, National Science Foundation. October 10, 2008

Learning Trajectories and Rational Number Reasoning. Workshop on Higher Cognition in Adolescents and Young Adults: Social, Behavioral, and Biological Influences on Learning, National Science Foundation, Washington, DC September 30, 2008

A Synthesis of the Research on Rational Number Reasoning. XI International Congress in Mathematics Education, Monterrey, Mexico, July 6-11, 2008

From Learning Trajectories to Diagnostic Assessments for K-8 Rational Number Reasoning. National Conference of the Council of Chief State School Officers, Orlando. June 18, 2008

Mathematics Initiatives at the Friday Institute. Leadership Conference of the North Carolina Council of Teachers of Mathematics, Greensboro, NC. October 21, 2007

"Tracing the Evolution of Mathematics Content Standards in the United States: Looking Back and Projecting Forward towards National Standards." Conference on K-12 Mathematics Curriculum Standards, sponsored by CSMC, NCTM, Achieve, College Board, MAA, ASA. February 5-6, 2007

Plenary Speaker for Department of Education's Mathematics and Science Partnership's meetings on evaluation, Dallas, TX. February 7, 2007

International Conference of the Learning Sciences, Plenary Panel on the Promise of the Learning Sciences, Chair K. Sawyer, June 28, 2006 (Also given at the American Education Research Association, San Francisco, 2006).

From Constructivism to Modeling (written with A. Maloney). Middle Eastern Teachers of Science Mathematics and Computing (METSMaC), Abu Dhabi, United Arab Emirates. March 11, 2006

Arizona State University, Diversity Summit Series of the Intergroup Relations Center, Office of the Provost, "High Stakes Testing, Instructional Validity and a Theory of Equity and Diversity" (a plenary lecture) and "Practices Affective Diversity and Equity in relation to High Stakes Testing" (a follow-up workshop. March 1 and 2, 2006.

Wingspead Conference Opening Plenary Framing Effective and Fair Data Use from High Stakes Testing in Historical, Legal, and Technical Contexts October 31- November 2, 2005. Wingspread, Wisconsin.

AERA Workshop on Evaluating Curricular Effectiveness and Presentation of Report, April 10, 2005 in Montreal, Canada.

National Council of Supervisors of Mathematics, *On Evaluating Curricular Effectiveness*, April 6, 2005, Anaheim, CA.

NCTM Research Presession *On Evaluating Curricular Effectiveness* Anaheim, CA April 6, 2005.

Association of State Supervisors of Mathematics: *On Evaluating Curricular Effectiveness.* Anaheim, CA April 3, 2005.

First Research Conference for the National Center for the Study of Mathematics Curriculum, "Comparing and Contrasting the NRC Report and the Approach of What Works Clearinghouse" Plenary Address. February 23-25, 2005 Phoenix, AR.

Teacher's Reasoning about Multiplicative Structures, (with S. Kazak) Invited address at Mathematics Education of Teachers 2, AMS/MAA meetings, sponsored by Benjamin Banneker, January 3, 2005, Atlanta, GA.

Multiple Methods in Educational Research, NRC, National Academy of Sciences, Discussant on Mathematics Education presentation December 14, 2005, Washington D.C.

Defining Curricular Effectiveness. A campus-wide invited speech. Washington University in St. Louis, November 29, 2005, St. Louis, MO.

Inaugural Speaker for STEM Speaker Series, " On Evaluations of Curricular Effectiveness in Mathematics" Penn State University November 15-6, 2004 State College,PA.

NRC Release presentation *On Evaluating Curricular Effectiveness,* September 28-30, 2005. National Academy of Sciences, Washington D. C.

University of Arizona. On Content Analysis in Evaluating Curricular Effectiveness, September 16, 2004, Tucson, AZ.

Inquiry and Reasoning Dialectic in Technologically-Engaged Modeling. Jere Confrey and Alan Maloney, Invited Plenary, Applications and Modeling Conference, ICMI, Dortmund, Germany, February 12, 2004.

RUME, The conduct of research and methods in mathematics education, Arizona State University, September, 2003.

Conference titled: Social Constructivism, Socioculturalism, and Social Practice Theory: Relevance and Rationalizations in Mathematics Education, Norway, March 2000.

"Implementation Research: New Kinds of School Partnerships", presented at Council on Chief State School Officers, Committee on Research Management, February 2000.

"SYRCE- Systemic Research Collaborative for Education: New Approaches of Research", presented to the National Science Foundation, Directors of Education & Human Resources, February 2000.

"U-teach: Innovative Second Teacher Preparation Program," presented at National Association of System Heads, Austin, TX, September 1999.

Invited Opening Address to Australian Mathematics Teachers Association, Melbourne, Australia, June 1998

Speaker, Detroit Urban Systemic Initiative, Detroit, MI, July 1998.

Guest Speaker, "Math and Mythology", invited plenary address given at the 25th anniversary celebration for the founding of the Instituts für Didaktik der Mathematik (IDM), Bielefeld, Germany.

Plenary Speaker, "Having a Deep Understanding of Mathematics and Technology for Elementary Teachers", presentation given at local Statewide Systemic Initiative meeting, Lago Vista, TX, October 1997.

Plenary Speaker, "Changing from Preparing Mathematicians Only to Educating a Technologically Fluent and Competent Workforce--Are We ready, Willing...and Able?". Talk given at the Research Conference on Collegiate Mathematics Education, Mt. Pleasant, MI, September 1997.

Plenary Speaker, International Conference of the Psychology of Mathematics Education, Recife, Brazil, July 1995.

Assessment Needs of State of Oregon K-16 Science/Mathematics Education, Oregon State University, Corvallis, OR, March 1995.

Plenary Talk, National Educational Computing Conference, Lesley College, Boston, MA, June 1994.

Louisiana State University, Project 2061 Research Blueprint, "An Agenda for Equitable Access to Quantitative Tools", New Orleans, LA. Sponsored by the American Association for Advancement of Science, April 1994.

Plenary Speaker, Psychology of Mathematics Education-NA Conference, Asilomar Conference Center, Monterey, CA, October 1993.

China-US-Japan Joint Meeting on Mathematics Education, "Diversity, Tools, and New Approaches to Teaching Functions", Normal University, Shanghai, China, October, 1993.

Special Lecture, Psychology of Mathematics Education International Conference-Japan, "Splitting and Counting: New Approaches to Multiplicative Relations", University of Tsukuba, Tsukuba, Japan, July 23, 1993.

"Social Constructivism and Mathematics", the Canadian Mathematical Society, York University, Toronto, Canada, May 28-June 1, 1993.

"The Use Of Modeling In Pre-college Education", sponsored by the National Science Foundation, Lesley College, Cambridge, MA, February 3-7, 1993.

The Association of American Colleges Annual Meeting, Seattle, WA, January 13-17, 1993, with Lynn Steen.

Every businesses needs a business address, even when it's run from a home. Most home-based businesses just starting out can use their home address as their business mailing address to help keep expenses low. This is certainly a viable solution for many entrepreneurs long term, but you may want to consider whether an additional business mailing address will be of benefit to you. What is a Business Address? A business address is an address that is used to designate your principal place of business. It is where your business is supposedly operating from, but may not always be the case. The address is used for communicating ... Virtual office spaces, or virtual business addresses provide you with a professional-looking mailing address, and many also offer additional features and facilities, such as receptionist services and meeting spaces which can be rented when you need them. Mailbox services. When you rent a mailbox at a service such as those offered at The UPS Store or Mail Boxes Etc., rather than using your mailbox number as the address, you can use the store's street address with your mailbox number as a suite, or apartment number.