# VICTORIA R. JACOBS

# University of North Carolina at Greensboro

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#### **EDUCATION**

- Ph.D. University of Wisconsin–Madison, 1996 Educational Psychology (Cognitive Science Applied to Education)
- M.S. University of Wisconsin–Madison, 1993 Educational Psychology (Cognitive Science Applied to Education)
- B.A. Dartmouth College, 1985 (graduated *cum laude* with High Honors in Psychology) Psychology

#### PROFESSIONAL EXPERIENCE

2012–present	James D. and Johanna F. Yopp Distinguished Professor (Mathematics Education), University of North Carolina at Greensboro
2011–2012	Professor (Mathematics Education), San Diego State University
2001–2011	Associate Professor (Mathematics Education), San Diego State University
1998–2001	Assistant Professor (Mathematics Education), San Diego State University
1996–1998	Assistant Professor (Learning and Instruction), California State University San Marcos
1992–1996	Project Assistant & Workshop Facilitator (Cognitively Guided Instruction [CGI] project), University of Wisconsin-Madison

#### **SPONSORED PROJECTS**

### **Externally Funded Grants**

• National Science Foundation (Discovery Research K–12 (DRK–12) Program) (\$2,980,973; 2013–2017)

Theorizing and Advancing Teachers' Responsive Decision Making in the Domain of Rational Numbers

Principal Investigator: Susan B. Empson; Co-Principal Investigator: Victoria R. Jacobs

• National Science Foundation (ESIE Teacher Professional Continuum Program)

(Original Award: \$2,497,257; Supplement: \$97,870; 2005–2012)

Investigating the Needs of Elementary School Teachers of Mathematics at Different Points During Sustained Professional Development

Principal Investigator: Randolph A. Philipp; Co-Principal Investigator: Victoria R. Jacobs

# • National Council of Teachers of Mathematics (Edward G. Begle Grant)

(\$8,000; 2002–2004)

Using Problem-Solving Interviews as a Tool for Teachers' Professional Development

University Professor: Victoria R. Jacobs

Classroom Teachers: Cathy Bullock, Cristi Cunningham, Julie Kusiak, Linda Verga

# • National Science Foundation (ESIE Teacher Enhancement Program)

(\$1,651,247; 2000–2004)

Preparing Elementary Teachers to Help Students Shift from Arithmetic to Algebraic Reasoning Principal Investigator: Thomas P. Carpenter; Co-Principal Investigator: Megan Loef Franke Evaluator: Victoria Jacobs

# • National Science Foundation (Professional Opportunities for Women in Research and Education) (\$74,999; 2000–2002)

Providing "Invitations to Learn" to Elementary Mathematics Teachers

Principal Investigator: Victoria Jacobs

# • Spencer/MacArthur Professional Development Research and Documentation Grant (\$150,000; 1997–2000)

SUAVE: Examining the Role of Coach as Professional Development Model

Principal Investigator: Merryl Goldberg; Research Team: Victoria Jacobs, Tom Bennett

# **Internally Funded Grants**

- Faculty Development Program (SDSU, half-time leave, Spring 2005)

  Understanding and Supporting Teachers' Expertise in Responding to Children's Thinking During Mathematical Problem Solving
- Faculty Development Program (SDSU, \$2,688, 2002–2003)

  Exploring Videoclips to Refine a Framework for Understanding Teacher-Student Interactions

  During Mathematical Problem Solving
- Faculty Development Program (SDSU, \$3,400, 2000–2001)
  Understanding Teacher Collaborations in Elementary Mathematics Classrooms
- Research, Scholarship, and Creative Activity (SDSU, \$1,700, 2000–2001) Understanding Teacher Collaborations in Elementary Mathematics Classrooms
- Research, Scholarship, and Creative Activity (SDSU, \$1,852, 1999–2000)

  Understanding Teacher-Directed Site-Based Professional Development in Elementary

  Mathematics
- Faculty Development Program (SDSU, \$3,353, 1998–1999)

  Can Emerging Teacher Leaders Facilitate the "Scaling-Up" of a Professional Development Program in Mathematics?
- Research, Scholarship, and Creative Activity (SDSU, \$3,353, 1998–1999)

  Can Emerging Teacher Leaders Facilitate the "Scaling-Up" of a Professional Development Program in Mathematics?
- Lottery Grants (CSU San Marcos, \$6,350, 1997–1998; \$6,400, 1998–1999)

  Providing Access to Community Resources in Mathematics, Science, and Technology Education (with Kathy Norman)

- **University Professional Development Grant** (CSU San Marcos, \$2,000, 1997–1998) *Teaching Mathematics in the Elementary School* (with Tom Bennett)
- Distinguished-Teacher-in-Residence Assigned Time Grant (CSU San Marcos, 6 teaching credits, 1997–1998)

  Mathematics Study Group Focused on Understanding Children's Thinking

#### **PUBLICATIONS & PRESENTATIONS**

#### **Peer Reviewed Articles**

- Jacobs, V. R., & Empson, S. B. (2015). Responding to children's mathematical thinking in the moment: An emerging framework of teaching moves. *ZDM–The International Journal on Mathematics Education*. Advanced online publication. doi: 10.1007/s11858-015-0717-0
- Jacobs, V. R., Martin, H., Ambrose, R. C., Philipp, R. A. (2014). Warning signs for taking over children's thinking. *Teaching Children Mathematics*, 21, 107–113.
- Jacobs, V. R., & Philipp, R. A. (2010). Supporting children's problem solving. Teaching Children Mathematics, 17(2), 98–105.
   Article was selected as an "Editor and Panel Pick" for sharing and interpreting research (2010–2011) and highlighted in the "In the Spotlight" section of the 7<sup>th</sup> edition of the mathematics methods book, Mathematics A Good Beginning, (2013) by A. P. Troutman & P. D. Hunsader
- Jacobs, V. R., Lamb, L. L. C., & Philipp, R. A. (2010). Professional noticing of children's mathematical thinking. *Journal for Research in Mathematics Education*, 41(2), 169–202.
- Jaslow, L. & Jacobs, V. (2009, Spring). Helping kindergartners make sense of numbers to 100. *The Journal of Mathematics and Science: Collaborative Explorations*, 11, 195–213.
- Lamb, L. C., & Jacobs, V. (2009). Establishing and maintaining program coherence in a cohort-based graduate program. *The Teacher Educator*, 44(2), 126–142.
- Jacobs, V. R. & Ambrose, R. C. (2008). Making the most of story problems. *Teaching Children Mathematics*, 15, 260–266.
- Jacobs, V. R., Franke, M. L., Carpenter, T. P., Levi, L., & Battey, D. (2007). Professional development focused on children's algebraic reasoning in elementary school. *Journal for Research in Mathematics Education*, 38(3), 258–288.
- Jacobs, V. R., & Kusiak, J. (2006). Got tools? Exploring children's use of mathematics tools during problem solving. *Teaching Children Mathematics*, 12, 470–477.
- Jacobs, V. R., Ambrose, R. C., Clement, L., & Brown, D. (2006). Using teacher-produced videotapes of student interviews as discussion catalysts. *Teaching Children Mathematics*, 12, 276–281. *Article was selected for reprinting:* 
  - Jacobs, V. R., Ambrose, R. C., Clement, L., & Brown, D. (2008). Using teacher-produced videotapes of student interviews as discussion catalysts. In J. M. Bay-Williams & K. Karp (Eds.), *Growing* professionally: Readings from NCTM publications for grades K–8 (pp. 76–82). Reston, VA: National Council of Teachers of Mathematics.

- Jacobs, V. R., & Philipp R. A. (2004). Mathematical thinking: Helping prospective and practicing teachers focus. *Teaching Children Mathematics*, 11, 194–201.
  - Article was selected for reprinting:
  - Jacobs, V. R., & Philipp, R. A. (2008). Mathematical thinking: Helping prospective and practicing teachers focus. In J. M. Bay-Williams & K. Karp (Eds.), *Growing professionally: Readings from NCTM publications for grades K–8* (pp. 17–25). Reston, VA: National Council of Teachers of Mathematics.
  - Jacobs, V. R., & Philipp, R. A. (2005, Fall). Mathematical thinking: Helping prospective and practicing teachers focus. In *Virginia Mathematics Teacher*, *32*(1), 16–21.
- Berg, M., Grisham, D. L., Jacobs, V. R., & Mathison, C. (2002). Can a professional development school have a lasting impact on teachers' beliefs and practices? *Teacher Education Quarterly*, 29(3), 7–24.
- Peressini, D., Jacobs, V. R., Chapin, J., Chenoweth, C., Paquette, M., & Valentine, C. (2002). Working with parents to enhance school mathematics. *Colorado Mathematics Teacher*, 35(1), 12–16.
- Jacobs, V. R., Bennett, T. R., & Bullock, C. (2000). Selecting books in Spanish to teach elementary mathematics. *Teaching Children Mathematics*, 6, 582–587.
- Jacobs, V. R. (1999). How do students think about statistical sampling *before* instruction? *Mathematics Teaching in the Middle School*, 5, 240–246, 263.
- Carpenter, T. P., Franke, M. L., Jacobs, V. R., & Fennema, E. (1998). Invention and understanding in the development of multidigit addition and subtraction procedures: A longitudinal study. *Journal for Research in Mathematics Education*, 29(1), 3–20.
- Fennema, E., Carpenter, T. P., Jacobs, V. R., Franke, M. L., & Levi, L. (1998). A longitudinal study of gender differences in young children's mathematical thinking. *Educational Researcher*, 27(5), 6–11.
- Fennema, E., Carpenter, T. P., Jacobs, V. R., Franke, M. L., & Levi, L. (1998). New perspectives on gender differences in mathematics: A reprise. *Educational Researcher*, 27(5), 19–21.
- Fennema, E., Carpenter, T., Franke, M. L., Levi, L., Jacobs, V. R., & Empson, S. B. (1996). Mathematics instruction and teachers' beliefs: A longitudinal study of using children's thinking. *Journal for Research in Mathematics Education*, 27(4), 403–434.
- Lajoie, S. R., Jacobs, V. R., & Lavigne, N. C. (1995). Empowering children in the use of statistics. *Journal of Mathematical Behavior*, 14(4), 401–425.

#### **Books**

- Sherin, M. G., Jacobs, V. R., & Philipp, R. A., Eds. (2011). *Mathematics teacher noticing: Seeing through teachers' eyes*. New York: Routledge.

  \*Won the American Educational Research Association Division K Exemplary Research in
  - "won the American Educational Research Association Division K Exemplary Research in Teaching and Teacher Education Award (2013)

# **Peer Reviewed Chapters**

- Jacobs, V. R., Lamb, L. L. C., Philipp, R. A., & Schappelle, B. P. (2011). Deciding how to respond on the basis of children's understandings. In M. G. Sherin, V. R., Jacobs, & R. A. Philipp (Eds.), *Mathematics teacher noticing: Seeing through teachers' eyes* (pp. 97–116). New York: Routledge.
- Jacobs, V. R., Philipp, R. A., & Sherin, M. G. (2011). Preface. In M. G. Sherin, V. R. Jacobs, & R. A. Philipp (Eds.), *Mathematics teaching noticing: Seeing through teachers' eyes* (pp. xxv–xxvii). New York: Routledge.
- Sherin, M. G., Jacobs, V. R., & Philipp, R. A. (2011). Situating the study of teacher noticing. In M. G. Sherin, V. R., Jacobs, & R. A. Philipp (Eds.), *Mathematics teacher noticing: Seeing through teachers' eyes* (pp. 3–13). New York: Routledge.
- Goldberg, M., Bennett, T., & Jacobs, V. R. (2004). Artists in the classroom: The role of resistance in positive change. In M. Goldberg (Ed.), *Teaching English language learners through the arts: A SUAVE experience* (pp. 125–136). New York: Allyn & Bacon.
- Jacobs, V. R., Goldberg, M., & Bennett, T. (2004). Experiencing science through the arts. In M. Goldberg (Ed.), *Teaching English language learners through the arts: A SUAVE experience* (pp. 87–98). New York: Allyn & Bacon.
- Jacobs, V. R., Goldberg, M., & Bennett, T. (2002). Uncovering an artistic identity while learning to teach through the arts. In E. Mirochnik & D. Sherman (Eds.), *Passion and pedagogy: Relation, creation, and transformation in teaching*, (Vol. 1, pp. 218–232). New York: Peter Lang Publishing.

# **Invited Chapters**

- Jacobs, V. R., (2015). Foreword. In T. J. Land, C. Drake, M. Sweeney, N. Franke, & J. M. Johnson, Transforming the task with number choice: Kindergarten through Grade 3. Reston, VA: National Council of Teachers of Mathematics.
- Philipp R., Jacobs, V. R., & Sherin, M. G (2012). Noticing of mathematics teachers. In S. Lerman (Ed.), *Encyclopedia of mathematics education: Springerreference*, Article ID: 313299, Chapter ID: 120. Encyclopedia entry retrieved April 22, 2013, from http://www.springerreference.com/docs/html/chapterdbid/313299.html
- Lamb, L. C., Philipp, R. A., Jacobs, V. R., & Schappelle, B. P. (2009). Developing teachers' stances of inquiry: Studying teachers' evolving perspectives. In D. Slavit, T. Holmlund Nelson, & A. Kennedy (Eds.), *Perspectives on supported collaborative teacher inquiry*, (pp. 16–45). New York: Taylor & Francis.
- Empson, S. B. & Jacobs, V. R. (2008). Learning to listen to children's mathematics. In D. Tirosh & T. Wood (Eds.), *International handbook of mathematics teacher education: Vol. 2: Tools and processes in mathematics teacher education*, (pp. 257–281). Rotterdam, The Netherlands: Sense Publishers.

- Jacobs, V. (2004). Perspective on "Using knowledge of children's mathematics thinking in classroom teaching: An experimental study." In T. P. Carpenter, J. Dossey, & J. Koehler (Eds.), Classics in mathematics education research (Vol. 1, p. 134). Reston, VA: National Council of Teachers of Mathematics.
- Jacobs, V. (2002). Invention and understanding in the development of multidigit addition and subtraction procedures: A longitudinal study. In J. Sowder & B. Schappelle (Eds.), *Lessons learned from research* (pp. 93–100). Reston, VA: National Council of Teachers of Mathematics.

# **Refereed Conference Proceedings**

- Jessup, N., Hewitt, A., Jacobs, V., & Empson, S. (2015, November). Understanding elementary school teachers' perspectives on children's strategies for equal sharing problems. In T. G. Bartell, K. N. Bieda, R. T. Putnam, K. Bradfield, & H. Dominguez (Eds.), *Proceedings of the thirty-seventh annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (p. 1000). East Lansing: Michigan State University.
- Ambrose, R., Nicol, C., Crespo, S. Jacobs, V., Moyer, P., & Haydar, H. (2004, October). Exploring the use of clinical interviews in teacher development. In D. E. McDougall & J. A. Ross (Eds.), *Proceedings of the twenty-sixth annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 1, pp. 89–91). Toronto, Ontario, Canada.
- Jacobs, V., Ambrose, R., & Clement, L. (2000, October). Tensions involved in providing professional development. In M. Fernández (Ed.), *Proceedings of the twenty-second annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education* (Vol. 2, p. 623). Tucson, AZ.
- Carpenter, T. P., Empson, S., & Jacobs, V. (1996). Integrating cognitive and classroom research: Examples of innovative mathematics instruction. In J. A. Beltran (Ed.), *Cognitive processes in the learning of mathematics: Educational interventions*. From the Second Congress on Psychology and Education, Madrid, Spain.
- Jacobs, V. (1987). Conducting the test—Who does what? In *Proceedings of the International Professional Communication Conference* (pp. 131–134). Winnipeg, Manitoba, Canada: The Institute of Electrical and Electronic Engineers, Inc.

#### **Newsletters & Research Center Publications**

- Carpenter, T. P., Fennema, E., Franke, M. L., Empson, S. B., & Jacobs, V. (1994). *Teaching and learning of rational number: Proposed framework for CGI teacher development in the upper elementary grades*. Madison: University of Wisconsin-Madison, Wisconsin Center for Educational Research.
- Jacobs, V. R. & Lajoie, S. (1994). *Integrating statistics into the school curriculum*. Madison, WI: National Center for Research in Mathematical Sciences Education.

#### **National Conference Presentations**

- Jessup, N., Hewitt, A., Jacobs, V., & Empson, S. (2015). *Understanding teachers' perspectives on children's strategies for equal sharing problems*. Poster presented at the 2015 annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, East Lansing, MI.
- Jacobs, V. R., Empson, S. B., Krause, G., & Pynes, D. (2015, April). *Responsive teaching with fractions*. Paper presented at the research conference of the 2015 annual meeting of the National Council of Teachers of Mathematics, Boston, MA.
- Jacobs, V. R., Lamb, L. C., Philipp, R. A., & Empson, S. B. (2015, February). *The complexity of noticing children's mathematical thinking*. Presented at the 2015 annual meeting of the American Association of Colleges for Teacher Education, Atlanta, GA.
- Webel, C., Deleeuw, W. W., Empson, S. B., Jacobs, V. R., Land, T., Leatham, K. R., Peterson, B. E., Stockero, S. L., & Van Zoest, L. R. (2015, February). *Defining and developing teaching practices related to responding to students' mathematical thinking*. Presented at the 2015 annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.
- Empson, S. B., & Jacobs, V. R. (2014, August). *Responsive Teaching in Elementary Mathematics*. Presented at the 2014 CADRE (Community for Advancing Discovery Research) DRK-12 PI Meeting, Washington, DC.
- Siegfried, J., Philipp, R. A., Jacobs, V. R., Lamb, L. C., Bishop, J. P., Nanna, R., Hawthorne, C., & Schappelle, B. (2014, February). *An analysis of mathematical content knowledge for teaching*. Presented at the 2014 annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Jacobs, V. R., Sherin, M. G., & Philipp, R. A. (2013, November). *Mathematics teacher noticing: A hidden skill of teaching*. Working group session at the 2013 annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Chicago, IL.
- Edgington, C., Wilson, P.H., Sztajn, P., Myers, M., Herbel-Eisenmann, B., Jacobs, V., & Stinson, D. (2013, April). *Teachers' stereotypes of students' mathematical work*. Presented at the annual research presession of the National Council of Teachers of Mathematics, Denver, CO.
- Russell, S. J., Franke, M., Schifter, D., Bastable, V., Davenport, L., & Jacobs, V. (2013, April). Elementary teacher and student learning about generalization and proof. Presented at the annual research presession of the National Council of Teachers of Mathematics, Denver, CO.
- Bishop, J. P., Philipp, R. A., Whitacre, I., Stephan, M. & Jacobs, V.R. (2013, January). *Using integers to rethink the role of context in school mathematics*. Presented at the 2013 annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.
- Jacobs, V. & Martin, H. (2013, January) *Promoting mathematical conversations after the correct answer*. Presented at the 2013 annual meeting of the Association of Mathematics Teacher Educators, Orlando, FL.

- Philipp, R. A., Jacobs, V. R., Lamb, L. C., Bishop, J. P., Siegfried, J., & Schappelle, B. (2012, April). A study of teachers engaged in sustained professional development. Paper presented at the 2012 annual research presession of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Heid, M. K., Langrall, C., Jacobs V., & Barnes, D. (2012, April). *Making an effective argument in JRME: Supporting claims with evidence*. Working Session held at the 2012 annual research presession of the National Council of Teachers of Mathematics, Philadelphia, PA.
- Jacobs, V. R., Ambrose, R. C., Philipp, R. A., & Martin, H. (2011, April). *Exploring One-On-One Teacher-Student Conversations During Mathematical Problem Solving*. Paper presented at the 2011 annual meeting of the American Educational Research Association, New Orleans, LA.
- Sherin, M.G., Jacobs, V. R., Philipp, R. A., Erickson, F., Goldsmith, L., Kazemi, E., Star, J., & van Es, B. (2011, April). *Mathematics teacher noticing: Seeing through teachers' eyes*. Symposium presented at the 2011 annual meeting of the American Educational Research Association, New Orleans, LA.
- Philipp, R. A., Sherin, M. G., & Jacobs, V. R. (2011, January). *Mathematics teacher noticing: Seeing through teachers' eyes*. Presented at the 2011 annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Mewborn, D., Ellis, A., Thanheiser, E., Herbel-Eisenmann, B., & Heid, K. M. (2010, April). *From Dissertation to JRME Publication*. Working Session held at the 2010 annual research presession of the National Council of Teachers of Mathematics, San Diego, CA. [Note that this session was a presentation of the JRME Editorial Panel (of which I was a member) but only the chair and editor are listed from the panel.]
- Philipp, R., Jacobs, V., Lamb, L., & Siegfried, J. (2010, April). *Using video and student work focused on children's thinking to help professional developers support K–3 teachers in transforming their teaching*. Presented at the 2010 annual meeting of the National Council of Supervisors of Mathematics, San Diego, CA.
- Philipp, R., Siegfried, J., Jacobs, V., Lamb, L., & Schappelle, B. (2010, April). *Productive disposition: The missing component of mathematical proficiency*. Presented at the 2010 annual research presession of the National Council of Teachers of Mathematics, San Diego, CA.
- Lamb, L., Jacobs, V., Pierson, J., Philipp, R., Schappelle, B., & Siegfried, J. (2010, January). *Teachers' conversations about video: Implications for professional development*. Presented at the 2010 annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Philipp, R., Jacobs, V., Lamb, L., Siegfried, J., & Schappelle, B. (2010, January). *Using video and student work focused on children's thinking to help professional developers support elementary school teachers in transforming their teaching*. Preconference session at the 2010 annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.

- Philipp, R., Siegfried, J., Schappelle, B., Jacobs, V., Lamb, L., & Pierson, J. (2010, January). *Studying and developing productive disposition of elementary school teachers and their students*. Working group session at the 2010 annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Jacobs, V. R., Lamb, L. C., Philipp, R. A., & Schappelle, B. (2009, April). Professional noticing of children's mathematical thinking. In R. Santagata (chair), *Teacher learning about students' mathematical thinking: A discussion of various PD models and research methodologies*. Symposium presented at the 2009 annual meeting of the American Educational Research Association, San Diego, CA.
- Jacobs, V. R., Lamb, L. C., Philipp, R. A., & Schappelle, B. (2009, April). *Responding on the basis of children's mathematical thinking*. Paper presented at the 2009 annual meeting of the American Educational Research Association, San Diego, CA.
- Philipp, R., Siegfried, J., Schappelle, B., Jacobs, V., & Lamb, L. (2009, April). *Assessing K–3 teachers' mathematical content knowledge: Practice and theory*. Working session held at the 2009 annual research presession of the National Council of Teachers of Mathematics, Washington, DC.
- Clement, L. L., Jacobs, V.R., Philipp, R.A., & Schappelle, B. (2008, March) Studying teachers' evolving perspectives. In D. Slavit (chair), *An examination of support for collaborative teacher inquiry*. Symposium presented at the 2008 annual meeting of the American Educational Research Association, New York, NY.
- Philipp, R., Schappelle, B., Siegfried, J., Jacobs, V., & Lamb, L. (2008, March). *The effects of professional development on the mathematical content knowledge of K–3 teachers*. Paper presented at the 2008 annual meeting of the American Educational Research Association, New York, NY.
- Jacobs, V. R., Lamb, L. C., Philipp, R., Schappelle, B., & Burke, A. (2007, April). Professional noticing by elementary school teachers of mathematics. In A. Ellis (chair), *Missing links in the implementation of mathematics education reforms: "Attention-focusing" and "noticing."*Symposium presented at the 2007 annual meeting of the American Educational Research Association, Chicago, IL.
- Philipp, R., Jacobs, V., Sherin, M., van Es, E., Lamb, L. C., & Nickerson, S. (2007, January). *Using video as a context for teachers' noticing*. Presented at the annual meeting of the Association of Mathematics Teacher Educators, Irvine, CA.
- Ambrose, R. C., & Jacobs, V. R. (2006, April). *Investigating teachers' abilities to support and extend children's mathematical thinking*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Jacobs, V. R, Franke, M. L., Carpenter, T. P., Levi, L., Battey, D., & Chan, A. (2005, April). Exploring the impact of large-scale professional development focused on children's algebraic reasoning. Paper presented at the annual meeting of the American Educational Research Association. Montreal, Quebec, Canada.

- Ambrose, R. C., Jacobs, V. R., & Gibson, K. (2004, January). *Responsive interactions: A framework for analyzing and supporting teachers' growth*. Presented at the annual meeting of the Association of Mathematics Teacher Educators, San Diego, CA.
- Jacobs, V. R., Ambrose, R. C., & Clement, L. (2004, January). *Using teacher-produced videotapes of problem-solving interviews as a professional development tool*. Presented at the annual meeting of the Association of Mathematics Teacher Educators, San Diego, CA.
- Jacobs, V. R,. & Ambrose, R. C. (2003, April). *Individual interviews as a window into teachers'* practice: A framework for understanding teacher-student interactions during mathematical problem solving. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Jacobs, V., & Raynes, D. (2002, April). The importance of teacher-teacher talk in the adoption of professional development ideas in elementary mathematics. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Jacobs, V., & Raynes, D. (2001, April). *Teacher-directed school-based professional development in elementary mathematics*. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.
- Raynes, D., & Jacobs, V. (2001, April). A community of practice that fosters continual teacher learning. Paper presented at the annual meeting of the American Educational Research Association, Seattle, WA.
- Jacobs, V., & Bullock, C. (2001, January). *Distinguished teachers in residence: A dynamic link between school districts and universities*. Presented at the fifth annual meeting of the Association of Mathematics Teacher Educators, Costa Mesa, CA.
- Jacobs, V., Ambrose, R., & Clement, L. (2000, October). *Tensions involved in providing professional development*. Paper presented at the 22<sup>nd</sup> annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Tucson, AZ.
- Berg, M., Grisham, D., Jacobs, V., & Mathison, C. (2000, April). *Can a professional development school have a lasting impact on teachers' beliefs and practices?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Jacobs, V. (2000, April). *Peer coaching discussions: What do teachers <u>really</u> talk about? Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.*
- Jacobs, V. (2000, April). What happens when the artistic world and the teacher's world meet? In B. McKean (chair), *Multiple perspectives on staff development in arts education: What can we learn from each other?* Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Bennett, T. R., Goldberg, M., Jacobs, V., & Wendling, L. (1999, April). *Teacher learning in professional development: The impact of an "artist as mentor" relationship*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

- Bennett, T. R., Jacobs, V., & Goldberg, M. (1999, April). *The power of multiple learning environments in professional development*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Goldberg, M., Bennett, T., & Jacobs, V. (1999, April). *Artists in the classroom: A role in the professional development of classroom teachers*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Jacobs, V. R., Goldberg, M., & Bennett, T. (1999, April). *Teaching core curriculum content through the arts*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Bennett, T., & Jacobs, V. (1998, April). *Becoming a teacher of mathematics: The effects of a children's thinking approach*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Jacobs, V. R. (1997, March). *Children's understanding of sampling in surveys*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Carpenter, T. P., Franke, M. L., Jacobs, V. R., & Fennema, E. (1996, April). *Invention and understanding in the development of multidigit addition and subtraction procedures: A longitudinal study*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Fennema, E., Carpenter, T. P., Jacobs, V. R., Levi, L., & Franke, M. L. (1996, April). *Gender differences in mathematical thinking*. Paper presented at the annual meeting of the American Educational Research Association, New York, NY.
- Fennema, E., Carpenter, T., Franke, M. L., Levi, L., Jacobs, V. R., & Empson, S. B. (1995, April). *Mathematics instruction and teachers' beliefs: A longitudinal study of using children's thinking*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Serlin, R. C., & Jacobs, V. R. (1995, April). *A test for mediation*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Jacobs, V., & Lajoie, S. (1994, April). *Statistics in middle school: An exploration of students' informal knowledge*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Littlefield, J., & Jacobs, V. (1991, April). Salience of conceptual problem features: An extension of differential sensitivity theory. Poster session presented at the meeting of the Society for Research in Child Development, Seattle, WA.

# **Local & Regional Conference Presentations**

- Smithey, M., Jacobs, V. (2015, November). *Power of questioning children about place* value. Presented at the annual meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Empson, S. B. & Jacobs, V. R. (2014, November). *Responsive teaching in elementary mathematics: The case of fractions*. Presented at the annual regional meeting of the National Council of Teachers of Mathematics, Houston, TX.
- Jessup, N., Jacobs, V., & Hewitt, A. (2014, October). *Fractions through equal sharing*. Presented at the annual meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Dalton, P., Richardson, K., & Jacobs, V. (2013, October). *Student ideas and equal sharing*. Presented at the annual meeting of the North Carolina Council of Teachers of Mathematics, Greensboro, NC.
- Jacobs, V. (2012, February). *Extending Children's Mathematical Thinking AFTER a Correct Answer*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Coles, L., Cunningham, C., & Jacobs, V. (2011, February). *The Magical Ten*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. & Verga, L. (2008, February). *Developing place-value understanding*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. & Brown, D. (2007, November). *Structuring tasks to promote children's place-value understanding in grades K–3*. Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Jacobs, V. & Brown, D. (2007, November). Why explore children's mathematical thinking? Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Cunningham, C., Sax, V., & Jacobs, V. R. (2007, February). *Using problem solving to develop place value understanding*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. R., & Gibson, K. (2006, February). *Introduction to Cognitively Guided Instruction (CGI)*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V., & Brown, D. (2005, November). Cognitively Guided Instruction (CGI): Improving instruction by paying attention to how children think about mathematics. Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Brown, D., & Jacobs, V. R. (2005, November). *How to foster Cognitively Guided Instruction (CGI) as the leader of a school site*. Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.

- Angel, L., Brown, D., Bullock, C., Coles, L., Gibson, K., Hinze, J., Jacobs, V., Jaslow, L., Matteson, R., Scharton, S., Verga, L, & Vik, T. (2005, February). *Cognitively Guided Instruction (CGI)* strand: Making decisions based on how children think about math. Presented at a full-day series of sessions at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Bullock, C. & Jacobs, V. (2004, February). *Math talks: Solving and discussing problem without paper and pencil*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Angel, L, Bullock, C., Coles, L., Cunningham, C., Groves, K., Hinze, J., Jacobs, V., Ling, M., Raynes, D., Russell, S., Verga, L., & Vik, T. (2002, February). *Using a kid's perspective to rethink math tasks*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Coles, L. & Jacobs, V. (2001, February). Moving beyond pre-set questions in problem solving: Enhancing questions by watching and listening to kids. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. & Bullock, C. (2001, February). *Using fractions in real-world contexts:* considerations for teaching and learning. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. & Bullock, C. (2000, November). *Making sense of fractions: Context matters*. Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Jacobs, V. & Bullock, C. (1999, November). *Using students' drawings to enhance mathematical understanding*. Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Philipp, R., Clement, L., Bullock, C., Clay, M., Jacobs, V., King, K., Poznanski, J., & Spatafora, C. (1999, February). *Hey buddy, can I borrow a ten? What is the big idea of subtraction?* Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Bullock, C. & Jacobs, V. (1998, November). *Beyond the answer: Why should kids talk about their thinking?* Presented at the annual meeting of the California Mathematics Council Southern Section, Palm Springs, CA.
- Jacobs, V. & Bullock, C. (1998, February). *Kids' talk: A window to their thinking*. Presented at the annual meeting of the Greater San Diego Mathematics Council, San Diego, CA.
- Jacobs, V. & Gehn, S. (1995, May). *Development of understanding in addition/subtraction strategies*. Presented at the annual meeting of the Wisconsin Mathematics Council, Green Lake, WI.

#### **Invited Presentations**

- Empson, S. & Jacobs, V. (2015, June). *They've gotten the right answer! Now what?* Keynote to be presented at the 8<sup>th</sup> Cognitively Guided Instruction (CGI) National Conference, Lawndale, CA.
- Jessup, N., Hewitt, A., & Jacobs, V. (2015, June). *Exploring children's sharing for equal sharing fraction problems*. To be presented at the 8<sup>th</sup> Cognitively Guided Instruction (CGI) National Conference, Lawndale, CA.
- Jacobs, V. R. (2015, May). *Research on mathematics teaching*. Presented at the UCSD/SDSU Mathematics and Science Education Seminar Series 2015, San Diego, CA.
- Jacobs, V. R. (2014, September). *Exploring children's mathematical thinking*. Presented to the UNCG Board of Trustees Board Meeting, Greensboro, NC.
- Empson, S. B. & Jacobs, V. R. (2014, August). *Theorizing and advancing teachers' responsive decision making in the domain of rational numbers*. Poster presented at the 2014 DR K–12 PI Meeting, Washington, DC.
- Jacobs, V. R., & Coles, L. (2013, July). *Recording children's strategies*. Presented at the Cognitively Guided Instruction 7<sup>th</sup> Biennial National Mathematic Conference, Des Moines, IL.
- Jacobs, V. (2013, March). Professional noticing of children's mathematical thinking: A hidden skill of teaching. Presented at James Madison University, Harrisonburg, VA.
- Jacobs, V. (2013, March). What happens <u>after</u> the correct answer during problem solving? Presented at James Madison University, Harrisonburg, VA.
- Jacobs, V. (2013, March). *The perks of extending our conversations: Building on students' mathematical thinking <u>after</u> the correct answer. Presented at the Meredith College TAP Math Symposium, Raleigh, NC.*
- Jacobs, V. (2013, February). *Supporting children's mathematical thinking in K–3 classrooms*. Presented at the Teachers' Development Group 2013 Leadership Seminar on Mathematics Professional Development, Portland, OR.
- Jacobs, V. (2012, May). Supporting children's mathematical thinking in K-2 classrooms. Presented in the professional development series "Teaching Mathematics 4 Understanding: Cognitively Guided Instruction (CGI) K-8," Orange County, CA.
- Philipp, R., Jacobs, V., Lamb, L. C., Bishop, J. P., Siegfried, J., & Schappelle, B. (2012, May). A study of teachers engaged in sustained professional development. Presented in the SDSU PI Lecture Series, San Diego, CA.
- Jacobs, V. (2012, February). What happens <u>after</u> the correct answer? Presented at the Teachers' Development Group 2012 Leadership Seminar on Mathematics Professional Development, Portland, OR.

- Jacobs, V. (2011, October). What happens AFTER the correct answer? Keynote talk presented at the Fresno Cognitively Guided Instruction (CGI) conference, Fresno, CA.
- Jacobs, V. & Philipp, R. (2011, June). *Noticing children's mathematical thinking: A hidden skill of teaching*. Keynote talk presented at the 6<sup>th</sup> Cognitively Guided Instruction (CGI) National Conference, Little Rock, AR.
- Jacobs, V. (2011, March). *Noticing and building on children's mathematical thinking in K–2 classrooms*. Presented in the professional development series "Teaching Mathematics 4 Understanding: Cognitively Guided Instruction (CGI) K–8," Orange County, CA.
- Jacobs, V. (2011, February). Supporting and extending children's mathematical thinking. Presented at the Teachers' Development Group 2011 Leadership Seminar on Mathematics Professional Development, Portland, OR.
- Jacobs, V. & Lewis, J. (2010, December). Adventures with Japanese Lesson Study. Presented in the Brownbag series at the Center for Research in Mathematics Education, SDSU, San Diego, CA.
- Jacobs, V., Lamb, L., & Philipp, R. (2009, February). *Professional noticing of children's mathematical thinking*. Presented in the Research Symposium series for the College of Education, SDSU, San Diego, CA.
- Jacobs, V. (2009, February). *Noticing children's mathematical thinking during instruction*. Presented at the Teachers' Development Group 2009 Leadership Seminar on Mathematics Professional Development, Portland, OR.
- Jacobs, V. & Brown, D. (2007, March). *Developing place-value understanding in grades K–3*. Presented at the 4th Cognitively Guided Instruction (CGI) National Conference, Raleigh, NC.
- Jacobs, V., Philipp, R., & Behrend, J. (2007, February). *Paying attention to what teachers notice in mathematics instruction*. Presented as part of the San Joaquin Valley Mathematics Project speaker series, Fresno, CA.
- Jacobs, V., Philipp, R., & Behrend, J. (2007, February). *Using video and written student work to support the teaching and learning of mathematics at the elementary school level*. Presented as part of the San Joaquin Valley Mathematics Project speaker series, Fresno, CA.
- Jacobs, V. (2006, July). *Understanding second graders' mathematical thinking*. Presented at the Smart Start Conference sponsored by Arkansas Department of Education, Little Rock, AK.
- Angel, L., Brown, D., & Jacobs, V. (2005, March). *Cognitively Guided Instruction (CGI)*. Presented to district administrators in the North County Professional Development Federation, San Marcos, CA.

- Jacobs, V. (2005, February). *Components of place-value understanding*. Presented in the Brownbag series at the Center for Research in Mathematics and Science Education, SDSU, San Diego, CA.
- Jacobs, V. (2005, January). *Questioning*. Presented to a group of K–5 teacher leaders in the Oceanside Unified School District, Oceanside, CA.
- Jacobs. V. & Vik, T. (2004, November). Cognitively Guided Instruction (CGI). Presented to San Diego county administrators at the Elementary Principals (K-6) and Superintendents Forum on Closing the Achievement Gap in Mathematics, San Diego County Office of Education, San Diego, CA.
- Jacobs, V. (2004, October). *Developing questioning expertise*. Presented at the 3rd Cognitively Guided Instruction (CGI) National Conference, St. Louis, MO.
- Jacobs, V. (2004, April). *Cognitively Guided Instruction overview*. Presented at a conference sponsored by Kappa Delta Pi and La Mesa Spring Valley School District, La Mesa, CA.
- Jacobs, V. (2004, April). *Meaningful math instruction*. Keynote address at a conference sponsored by Kappa Delta Pi and La Mesa Spring Valley School District, La Mesa, CA.
- Jacobs, V. (2004, March). *Children's mathematical thinking*. Presented to a group of grade 4 and grade 5 teachers in the Oceanside Unified School District, Oceanside, CA.
- Jacobs, V., Ambrose, R., & Valentine C. (2004, January). *Preparing young kids to problem solve through investigative counting*. Presented at the San Diego Cognitively Guided Instruction (CGI) conference, San Diego, CA.
- Jacobs, V. (2003, November). Presented to the Encinitas Union School District School Board about the importance of long-term professional development focused on children's mathematical thinking, Encinitas, CA.
- Jacobs, V. (2003, November). Presented to a group of K–8 teachers from Imperial Valley, CA about problem solving, San Diego, CA.
- Jacobs, V. (2003, March). *Individual interviews as a window into teachers' practice: A framework for understanding teacher-student interactions during mathematical problem solving.* Presented in the Brownbag series at the Center for Research in Mathematics and Science Education, SDSU, San Diego, CA.
- Jacobs, V. & Ambrose, R. (2002, October). Using videotaped interviews as a professional development tool. Presented at the 2nd Cognitively Guided Instruction (CGI) National Conference, Minneapolis, MN.
- Jacobs, V. (2002, June). Cognitively Guided Instruction: Listening to how children think about mathematics. Presented at McGill University, Montreal, Quebec, Canada.
- Jacobs, V. (2000, October). *Creating classroom communities that talk mathematics*. Presented at the 1st Cognitively Guided Instruction (CGI) National Conference, Phoenix, AZ.

- Jacobs, V. (2000, January). Collaborated with elementary school teachers to present to principals about mathematics problem solving, Encinitas, CA.
- Jacobs, V. (1999, Spring). *Understanding children's mathematical thinking*. Presented two sessions to teachers in the Corona-Norco School District, Corona, CA.
- Jacobs, V. (1999, April). Presented to college students serving as tutors in local middle schools as part of SDSU's Talent Search which helps students from low-income households who have the potential to be the first generation in their families to pursue postsecondary schooling, San Diego, CA.
- Jacobs, V. (1997, March). Presented to the Mathematics Instructional Improvement Committee in the Encinitas Union School District, Encinitas, CA.
- Jacobs, V. (1997, March). Presented to the Mathematics Cadre in the San Marcos Unified School District, San Marcos, CA.
- Jacobs, V. (1996, December). Invited Keynote Speaker for the Class Size Reduction Training for 450 teachers in Poway Unified School District, Poway, CA.

#### **Consulting & Advisory Board Membership**

- The Impact of a Teacher-Led Early Algebra Intervention on Children's Algebra Readiness for Middle School directed by Maria Blanton and Lindsay Demers (TERC), Eric Knuth, Ana Stephens, and Jee Seon Kim (University of Wisconsin Madison), and Despina Stylianou (City College of New York–CUNY) funded by the Institute of Education Sciences (2014–2018).
- Reciprocal Noticing: Latino/a Students and Teachers Constructing Common Resources in Mathematics directed by Higinio Dominguez (Michigan State University) and funded by the National Science Foundation (2013-2018)
- Characterizing Critical Aspects of Productive Mathematics Classroom Discourse directed by Jessica Pierson Bishop (University of Georgia) and funded by the National Science Foundation (2012-2017)
- Replicating the CGI Experiment in Diverse Environments directed by Robert Schoen (Florida State University), Walter Secada (University of Miami), and Juli Dixon (University of Central Florida) and funded by the Institute of Education Sciences (2012–2016)
- Professional Development for Culturally Relevant Teaching and Learning in Pre–K Mathematics directed by Thomas P. Carpenter, M. Beth Graue, Margaret R. Meyer, and Anita Wager (University of Wisconsin—Madison) with Victoria Jacobs as the evaluator; funded by the National Science Foundation (2010–2014)
- AnimalWatch: Connecting Math + Science directed by Carole Beale (University of Arizona) and funded by the National Science Foundation (2011)
- Mapping Developmental Trajectories of Students' Conceptions of Integers directed by Lisa Lamb, Randolph Philipp, and Jessica Pierson Bishop (San Diego State University) and funded by the National Science Foundation (2009–2012)

- Making Algebra Accessible Project (MAAP) directed by Stacey Brown (Pitzer College) and Rebecca Hendrick and funded by the California Postsecondary Education Commission (2008–2012)
- Improving Student Achievement in Mathematics directed by Nadine Bezuk and Lionel "Skip"
   Meno (San Diego State University) and funded by Qualcomm (2004–2008)
- *Markham Mathematics Collaborative* directed by Rebecca Ambrose (University of California-Davis) and funded by the Improving Teacher Quality State Grants program (2004)
- SAGE Handbook for Research in Education: Engaging Ideas and Enriching Inquiry. (Edited by C. Conrad & R. Serlin and published by Sage Publications, Thousand Oaks, CA) (2003–2006)
- Using Student-Generated Strategies in Instructional Interactions to Build Multiplicative Structures directed by Susan Empson (University of Texas-Austin) and funded by the National Science Foundation (2003)
- *Valle Imperial Mathematics K–8 Local Systemic Change Project* directed by Leslie Garrison and Royce Page (San Diego State University-Imperial Valley) and funded by the National Science Foundation (2001–2002)
- Integrating Mathematics and Pedagogy (IMAP) directed by Randolph Philipp and Judith Sowder (San Diego State University) and funded by the Interagency Education Research Initiative (IERI) (2000–2001)
- Investigating Multimedia Case Studies as a Tool for Preservice Teacher Development directed by Janet Bowers, Helen Doerr, and Kay McLain and funded by the National Science Foundation (1999)
- Offered a three-day workshop (with Randolph Philipp) to advise the Corona-Norco School District on their mathematics curriculum adoption, Corona, CA (1999)
- Collaborated with the Phoenix Urban Systemic Initiative to help organize city-wide implementation of Cognitively Guided Instruction (CGI) in grades K-3. Developed facilitator workshops for participants who subsequently provided workshops and classroom-based mentoring for over 2000 Phoenix elementary school teachers, Phoenix, AZ (1996–1997)
- Collaborated with the Ames, IA school district to help organize district-wide implementation of Cognitively Guided Instruction (CGI) in grades K-4. Coordinated 7 facilitators to work with 150 elementary school teachers and principals for a series of workshops, Ames, IA (1994–1996)

#### SELECTED NATIONAL PROFESSIONAL ACTIVITIES

- Committee member for the Senior Scholar Award for the Special Interest Group for Research in Mathematics Education for the American Educational Research Association (2014)
- Guest Editor for the *Journal for Research in Mathematics Education* for selected articles (2013–2014)
- Editorial Panel for the *Journal for Research in Mathematics Education* (Chair 2011–2012; Member 2009–2011)
- Co-hosted the 5<sup>th</sup> Biennial National Conference for Cognitively Guided Instruction (CGI), San Diego, CA (July/August 2009)
- Co-chaired the Mathematics Section (# 2) of the Division on Learning and Instruction (Division C) for the annual meeting of the American Education Research Association, Seattle, WA (2000–2001)

# HONORS AND AWARDS

- *Most Influential Faculty Award*, SDSU (2001, 2004, 2008, 2012)
- Kappa Delta Pi (Honorary Faculty Member), SDSU (2004)
- Outstanding Post Secondary Mathematics Teacher, Greater San Diego Mathematics Council (2002)
- University Peer Coaching/Teaching Portfolio Team, CSU San Marcos (1997–1998) Selected as member of faculty coaching program across colleges.
- University Dissertation Fellowship, University of Wisconsin–Madison (1995–1996)
- Teaching Assistant Mentor Appointment, University of Wisconsin–Madison (1992) School of Education Teaching Assistant Award
- Benjamin G. Benner Award (Honors Thesis award, Dartmouth College, 1985)