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Educational Leadership and Innovation

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Overview of Notable Leadership to Science Education through Leadership, Substantial Impact through Research, and Continuing Contributions to Science Education

Both my leadership and impact through research in science education is best described as my work to promote gender equity. In particular, I’d like to highlight my leadership in initiating the equity committee. In 1991, I and several other NARST members were concerned that research addressing the participation of women in science did not have a high profile among the NARST community nor was there a committee or strand addressing the issue of gender equity. As a consequence, I spearheaded a group that discussed the absence of any formal mechanisms to address gender equity in NARST policies, publications, representation in leadership positions, and forums for the presentation of research with several of the leadership of NARST. Although a gender equity committee was discouraged by some of the leadership I spoke with, I moved forward and with the help of other like-minded NARST members and proposed to the board that a gender equity committee be established. The board accepted my proposal and an ad hoc committee was created and I led that committee from 1992-95. The committee subsequently became a standing committee and the scope of the concerns enlarged to address equity issues relating to other under-represented groups. As a consequence the name of the committee was changed to simple the Equity committee.

My research has also has had a strong focus on gender issues in science education. One of the my publications, written with my graduate student Rosemary Leary, addressing girls in science ( *Letting Girls speak Out About Science*) was selected for the JRST issue featuring the most influential research in the past 40 years of the *Journal of Research in Science Teaching.*  This publication advocated that we not compare females to males and was a single sex study of what girls had to say about their interests in and attitudes about science. This research was influential in changing how research concerning issues of girls and women in science were viewed and how the research was conducted. On the basis of my research in gender equity I was made a Fellow of the American Association for the Advancement of Science in 2004 and a Fellow of the American Educational Research Association in 2009. In addition, under my co-editorship of JRST, we published the first article addressing homosexuality and a review, in the form of an editorial, documenting the lack of published research in JRST addressing gender equity. I have also worked with colleagues in Japan investigating and promoting gender equity in science education. On my vita publications, presentations, and activities with an asterisk all address the issue of gender equity issues in science.

My continuous contributions to science education began 33 years ago as a graduate student. I have been a regular presenter at NARST for all but one of those 33 years when I was on sabbatical and could not return to the United States. I have continued to publish in the area of gender equity while expanding my focus to teacher professional development and engineering education as well as advocating for more engineering education research at NARST. Much of my current work places my graduate students as lead authors on my grant funded research in order to support their development as scholars. Grant funding ($15,528,020) has supported research in science education, as well as collaboration with colleagues in science and engineering departments.

CREDENTIALS

Preparation

Ed.D, Science Education, Rutgers University, 1981

M.A.T., Elementary/Early Childhood Education, Trenton State College, 1975

B.A., Anthropology, University of Oklahoma, 1971

Certification

Elementary Certification (K‑8)

Early Childhood Certification

Comprehensive Science Certification (K‑12)

# EXPERIENCE – USA

Appointments

1998 – Professor, Arizona State University

1989 - 1998, Associate Professor, Arizona State University

1987 - 1989, Associate Professor, University of Utah

1981 - 1985, Assistant Professor, University of Utah

1980 ‑ 1981, Instructor, University of Utah

1978 - 1979, Research Assistant, Rutgers University

1977 - 1978, Teaching Assistant, Rutgers University

1975 ‑ 1978, Elementary Teacher

Administration

2010-2011, Executive Director of the Curriculum and Instruction PhD

1998, Assistant to the Department Director, for Programs in Curriculum and Instruction

Fall 1997, Director of TEAMS (Teacher Education in Arizona for Math and Science) middle/secondary program

1989 - 1991, Interim Department Chair, Curriculum and Instruction, Arizona State University

1988 - 1989, Director, Graduate Specialty in Cognition and Instruction, University of Utah

1985 - 1987, Elementary Education Program Coordinator, University of Utah

## EXPERIENCE – INTERNATIONAL

2008 summer, Visiting Scholar, Technion, Haifa, Israel

\*2000-2002, Gender Equity Curriculum Project, Japan

1997, World Bank Project for the Development and Field Testing of a National Science Education Curriculum, Turkey

1996, Sabbatical in Costa Rica, World Bank Project for Teacher In-Service Development

1985, Visiting Scholar, Curtin University, Perth, Western Australia

1969, Anthropological fieldwork, Mexico

RESEARCH AND PUBLICATIONS

Dissertation

\*Baker, D. (1982). *Differences in Personality, Attitude and Cognitive Abilities Found Among Biological, Physical Science and Nonscience Students*. Unpublished doctoral dissertation, Rutgers University, NJ.

Books

1. Baker, D. & Piburn, M. (1997). *Constructing Science*. Boston: Allyn and Bacon.
2. Baker, D. & Piburn, M. (1997). *Instructor’s Manual For Constructing Science in middle and Secondary School Classrooms.* Boston: Allyn and Bacon.
3. Turgut, M.F., Baker, D., Cunningham, R. & Piburn, M. (1997). *Ilkogretim Fen Ogretimi* (*Elementary Science Education*)*.* Ankara, Turkey: YOK/ DUNYA BANKASI, Milli Egitimi Gelistirme Projesi, Hizmet Oncesi Oretmen Egitimi.
4. \*Baker, D. & Scantlebury, K. (Eds.). (1995*). Science "Coeducation": Viewpoints From Gender, Race and Ethnic Perspectives* (NARST monograph # 7). Manhattan KS: National Association for Research in Science Teaching.

Book Chapters

# \*Scantlebury, K. & Baker, D. (2007). Gender issues in science education research: remembering where the difference lies. In S. Abel & N. Lederman (Ed.). *Handbook of Research in Science Education* (257-286). Washington, DC: NSTA.

1. Baker, D., Piburn, M. & Clark, D. (2005) TEAMS: Working together to improve teacher education. In R. Yaeger (Ed). Exemplary Science: Best Practices in Professional Development (pp. 35-39).National Science Teachers Association Exemplary Science Monograph Series. Washington, DC: NSTA.
2. \*Baker, D. (2001). Mathematics and science. In M. Forman-Brunell (Ed.). *Girlhood in America: An Encyclopedia* (pp. 435-444). Denver, CO: ABC Clio.
3. \*Baker, D. (1998). Equity issues in science education. In B. Fraser & K. Tobin (Eds.). *International Handbook of Research in Science Education* (pp. 869-896). Amsterdam: Kluwer.
4. \*Baker, D. (1997). Equity issues in science education. In D. Fisher & T. Rickards (Eds.). *Science, Mathematics and Technology Education Development: Proceedings of the 1997 International Conference on Science, Mathematics and Technology Education* (182-188). Perth, Australia: National Key Centre for School Science and Mathematics, Curtin University of Technology.
5. \*Baker, D. & Scantlebury, K. (1995). Where feminist research and science education meet. In D. Baker & K. Scantlebury (Eds.). *Science "Coeducation": Viewpoints From Gender, Race and Ethnic Perspectives* (NARST monograph # 7), (pp. 1-6). Manhattan KS: National Association for Research in Science Teaching.
6. \*Baker, D. (1995). Teachers, family and friends: Who makes the difference?. In D. Baker & K. Scantlebury (Eds.). *Science "Coeducation": Viewpoints From Gender, Race and Ethnic Perspectives*  (NARST monograph # 7), (pp. 160-177). Manhattan KS: National Association for Research in Science Teaching.
7. \*Scantlebury, K. & Baker, D. (1992). Achieving a gender equitable classroom. In F. Lawrenz, K., Cochran, J. Krajcik & P. Simpson (Eds*.). Research Matters to the Science Teacher, 5,* (pp. 93-100). Manhattan KS: National Association for Research in Science Teaching.

Journal Issue

1. Baker, D. (1991). A Summary of Research in Science Education-1988. *Science Education, 75*, 255-402.

Journal Articles in Review, in Revision, in Preparation (Refereed)

1. Lewis, E., Baker, D., Bueno Watts, N. & Lang, M. Professional learning community activity for science teachers: Building classroom discourse community. *Science Education* (under review).
2. Baker, D. R., Bueno-Watts, N., Lewis, E. B., Özdemir, G., Perkins, G., Uysal, S., Wong, S., Purzer, S., & Sen, T. The development of the discourse in inquiry science classrooms (DiISC) protocol: an instrument to measure science classroom discourse communities. *Journal of Research in Science Teaching* (under review).
3. Perkins, G., Baker, D., Bueno Watts, N., Sen, T., Chaudhuri, D., & Lang, M. Bridging analogies constructed by high school English teachers in understanding the science concepts of Energy. *Linguistics and Education (*under review*).*
4. Sen, T., Baker, D., Bueno Watts, N. & Perkins, G. Fidelity of implementation of the communication in English and science inquiry project over time. *Journal of Science Teacher Education* (in preparation*)*
5. Baker, D. and Pacheco, H. Translating research into practice: The TRIP model. (in preparation)

Journal Articles (Refereed)

1. Bueno Watts, N. Baker, D., & Semken, S. (2013). Looking beyond statistical significance to measure conceptual understanding. *Global Journal of Human Social Sciences, 13,* 3, version1.0.
2. Baker, D. (2013). What Works: Using Curriculum and Pedagogy to Increase Girls Interest and Participation in Science and Engineering. Special Issue *Theory into Practice*, *52*, 1, 14-20.
3. Baker, D., Lewis, E., Uysal, S., Purzer, S., Lang, M. & Baker, P. (2010). Using the communication in science inquiry project professional development model to facilitate learning middle school genetics concepts. *Professional Development in Education*. First Published on: 28 September 2010. DOI: 10.1080/1941527.2010.509945
4. Lewis, E., Kraft, K., Bueno Watts, N., Baker, Wilson, M. & Lang, M. (2010). Elementary teachers’ comprehension of flooding through inquiry-based professional development and use of self-regulation strategies. *International Journal of Science Education.* First published on: 20 September 2010 (ifirst*).* DOI: 10.1080/09500693.2010.506523
5. Krause, S., Kelly, J., Tasooji, A., Corkins, J., Baker, D., Purzer, S. (2010). Effects of pedagogy in an introductory materials science course. *International Journal of Engineering Education,* 26 (4), 869-879*.*
6. Lewis, E. & Baker, D. (2010). Calling for a new research agenda to rebuild geoscience departments and fuel the revolution in earth and space science education. *Journal of Research in Science Teaching*, 47, 121-129*.*
7. Semken, S., Butler Freeman, C., Bueno Watts, N., Neakrase, J., Dial, R., &

Baker, D. (2009). Factors that influence sense of place as a learning outcome of

place-based geoscience teaching. *Electronic Journal of Science Education,* 13 (2),

136-159*.*

1. Baker, D., Bueno-Watts, N., Lewis, E., Perkins, G., Wong, S., Uysal, S., Yasar-Purzer, S., Beard, R. (2009). The Communication in Science Inquiry Project (CISIP): A Project to Enhance Scientific Literacy through the Creation of Science Classroom Discourse Communities. *International journal of Environmental and Science Education* (special issue on scientific literacy), 4(3) 259-274.
2. Baker, D., Yasar, S., Robinson-Kurpius, S., Krause, S. & Roberts, C. (2007). Infusing design, engineering, and technology into K-12 teachers’ practice*. International Journal of Engineering Education*, 23, 884-893*.*
3. \*Baker, D., Krause, S., Yasar, S., Roberts, C. & Robinson-Kurpius, S. (2007). An intervention to address gender issues in a course on Design, Engineering and technology for science educators. *Journal of Engineering Education, 96 (3), 213-226.*
4. \*Scantlebury, K., Baker, D. Ayumi, S., Atsushi, Y. & Uysal, S. (2007). Avoiding the issue of gender in Japanese science education. *International Journal of Science and Mathematics Education, 5*, 415-438.

# Yasar, S., Baker, D., Robinson-Kurpius, S., Krause, S. & Roberts, C. (2006). Development of a Survey to Assess K-12 Teachers’ Perceptions of Engineers and Familiarity with Teaching Design, Engineering, and Technology. *Journal of Engineering Education , 95,* 205-216.

1. \*Baker, D. (2002). Good intentions: an experiment in single-sex science and mathematics classrooms. *Journal of Women and Minorities in Science and Engineering, 8*, 1-24.
2. Baker, D, (2002). The peer review process in science education journals. *Research in Science Education, 32*, 171-180.
3. \*Baker, D., Lindsey, R. & Blair, C. (1999). Girls summer lab: An intervention*. Journal of Women and Minorities in Science and Engineering, 5*, 79-95.

1. \*Baker, D. (1997). A female friendly science classroom*. National Association of Research for Science Teaching Web Page*, http://science.coe.uwf.edu/NARST/research/research.htm
2. \*Baker, D. & Leary, R. (1995). Letting girls speak out about science*. Journal of Research in Science Teaching, 1*, 3-27.
3. Piburn, M. & Baker D. (1993). If I were the teacher: A qualitative study of attitude toward science. *Science Education, 77*, 393-406.
4. \*Baker, D. (July/August 1992). I am what you tell me to be: Girls in science and mathematics. *Association of Science and Technology Centers Newsletter, 20*, (4), pp. 5,6,14.
5. Stofflett, R. & Baker, D. (1992). The effect of training in combinatorial reasoning and propositional logic on formal reasoning ability. *Research in Middle Level Education, 16*, 159-176.
6. \*Baker, D. & Leary, R. (1992). Letting girls speak out: School and social influences on science attitudes. *SCOPE, 92*, (2), 31-34.
7. Baker, D. & Piburn, M. (1991). Process skills acquisition, cognitive growth, and attitude change of ninth grade students in a scientific literacy course. *Journal of Research in Science Teaching, 28,* 423-436.

1. \*Baker, D. (1989). The influence of role specific self-concept and sex role identity on career choices in science among Australian secondary school students. *The Australian Science Teachers Journal, 3*, 99-104.

1. Baker, D. & Piburn, M. (1989). The effects of a scientific literacy course on subsequent learning in biology. *Journal of Research in Science Teaching, 27*, 447-491.
2. \*Piburn, M. & Baker, D. (1989). Sex differences in formal reasoning ability: Task and interviewer effects. *Science Education, 73*, 101-113.
3. \*Baker, D. (1988). Teaching for gender differences. *NARST News*, *30*, 5-6.
4. \*Baker, D. (1987). The influence of role-specific self- concept and sex role conflict on career choices in science. *Journal of Research in Science Teaching, 24*, 739-756.
5. \*Baker. D. (1987). Sex differences in classroom interactions in secondary science. *The Journal of Classroom Interaction, 22*, 6-12.
6. Reynolds, R. & Baker, D. (1987). The utility of graphical representations in text: Some empirical and theoretical issues. *Journal for Research in Science Teaching, 24*, 161-173.
7. \*Burton, G., Peterson, K., & Baker, D. (1985). Sex differences in geometry students' perception of ideal and actual behavior*.  Journal of Research and Development in Education, 18,* 55‑60.
8. \*Baker, D. (1985). Predictive value of attitude, cognitive ability, and personality to science achievement in the middle school. *Journal of Research in Science Teaching,* *22*, 103‑113.
9. \*Baker, D. (1984). Masculinity, femininity and androgyny among male and female science and nonscience college majors.  *School Science and Mathematics*, *84*, 459‑467.
10. \*Baker, D. (1983). Can the differences between male and female science majors account for the low number of women at the doctoral level in science?  *Journal of College Science Teaching*, *13*,102‑107.
11. \*Peterson, K., Burton, G. & Baker, D. (1983). Geometry students' role specific self‑concept: Success, teacher and sex differences. *Journal of Educational Research, 77*, 122‑125.
12. Enyeart, M., Baker, D. & Van Harlingen, D. (1980). Correlation of inductive and deductive logical reasoning to college physics. *Journal of Research in Science Teaching, 17,* 263‑267.

Journal Articles (Invited)

1. Baker, D. (2004). Focus on science literacy: The role of writing and speaking in the construction of scientific knowledge. *Eurasian Journal of Educational Research, 16*, 1-7.

Proceedings

1. Baker, D., Wood, L., Corkins, J. & Krause, S. (2013). Examining College Science Student Beliefs. *Proceedings of the National Association of Research in Science Teaching,* Rio Mar, Puerto Rico.
2. Culbertson, R., Sen, T., Warble, K., Baker, D. & Nemanich, R. (2011). Incorporating Authentic Scientific Research and the Nature of Science Into the High School Classroom. *Proceedings of the Materials Research Society*, San Francisco, CA.
3. Sen, T., Culbertson, R., Warble, K., Baker, D. & Nemanich, R. (2011). The Impact of Summer Research Experience for Science Teachers on Classroom Instruction.  *Proceedings of the Materials Research Society,* San Francisco, CA.
4. Sen, T., Baker, D., Bueno Watts, N., Perkins, G. & Lang, M. (2011). Changes in inquiry practices of English and science teachers over time. *Proceedings of the National Association of Research in Science Teaching,* Orlando, FL.
5. Perkins, G., Baker, D., Bueno Watts, N., Sen, T., Chaudhuri, D. & Lang, M. (2011). Arguments of CESIP students: Science versus English comparisons *Proceedings of the National Association of Research in Science Teaching,* Orlando, FL.
6. Baker, D., Bueno Watts, Sen, Perkins, G. & Chaudhuri, D. (2011). The relationship of teacher implementation of professional development to student scientific explanations and grades. *Proceedings of the National Association of Research in Science Teaching,* Orlando, FL.
7. Bueno Watts, N., Baker, D., Perkins, G., Sen, Y., Chaudhuri, D. & Lang, M. (2011). Improving students’ scientific explanations skills through research-based professional development. *Proceedings of the National Association of Research in Science Teaching,* Orlando, FL.
8. Berg, C. & Baker, D. (2011). Benefits observed in the research laboratory setting don’t always generalize to the classroom setting. *Proceedings of the National Association of Research in Science Teaching,* Orlando, FL.
9. Kelly, J., Heinert , K., Triplett, J., Baker, D., & krause, S. (2011). Uncovering and repairing atomic bonding misconceptions with multimodal assessment of student understanding in an introductory materials course. *Proceedings of the America Society for Engineering Education*, Vancouver, Canada.
10. Krause, S., Kelly, J., Baker, D. & Kurpius-Robinson, S. (2011). Effect of pedagogy on conceptual change in repairing misconceptions of differing origins in an introductory materials course. *Proceedings of the America Society for Engineering Education,* Vancouver, Canada.
11. Baker, D., Bueno Watts, N., Perkins, G. Sen, T., Lewis, E. & Lang, M. (2010). The effect of context and activities on teachers’ scientific explanations. *Proceedings of the National Association of Research in Science Teaching,* Philadelphia, PA.
12. Perkins, G., Baker, D., Bueno Watts, & Lang, M. (2010). Growth in high school English teachers’ understanding of the science concept of energy. *Proceedings of the National Association of Research in Science Teaching,* Philadelphia, PA.
13. Bueno Watts, N., Baker, D., Semken, S., Lang, M. (2010). Improving high school teachers’ content knowledge of energy in systems through research-based professional development. *Proceedings of the National Association of Research in Science Teaching,* Philadelphia, PA.
14. Sen, T., Bueno Watts, N., Perkins, G., Baker, D., Lang, M., Beard, R., Uysal, S., & Lewis (2010). The effect of implementing the CISIP model on students’ scientific explanations. *Proceedings of the National Association of Research in Science Teaching,* Philadelphia, PA.
15. Lewis, E., Baker, D., Helding, B. & Lang, M. (2010). Modeling professional development and classroom implementation of instructional strategies for building scientific classroom discourse communities (2010). *Proceedings of the National Association of Research in Science Teaching,* Philadelphia, PA.
16. Krause, S., Baker, D., Mehrins, C., Meyer, J. & Culbertson, R. (2010). Design and analyzing musical instruments as a gateway to mathematics, science and engineering for pre-service education students. *Proceedings of the American Society for Engineering Education,* Louisville, Ky.
17. Krause, S., Kelly, J., Baker, D. & Tasooji, A. (2010). An atomic bonding module for materials engineering that elicits and addresses misconceptions with concept-in-context multimodal activities, worksheets, and assessments. *Proceedings of the American Society for Engineering Education,* Louisville, Ky.
18. Krause, s., Kelly, J., Baker, D. & Robinson-Kurpius, S. (2010). Effect of pedagogy on conceptual change in repairing misconceptions of differing origins in an introductory materials course. *Proceedings of the American Society for Engineering Education,* Louisville, Ky.
19. Ganesh, T., Thieken, J., Baker, D., Krause, S., Roberts, C. , Elser, M., & Taylor, W. (2010). Learning through engineering design and practice: Implementation and impact of a middle school engineering education program. *Proceedings of the American Society for Engineering Education,* Louisville, Ky.
20. Kelly, J., Graham, A., Eller, A., Baker, D., Tasooji, A., & Krause, S. (2010). Supporting student learning, attitude and retention through critical class reflections. .*Proceedings of the American Society for Engineering Education,* Louisville, Ky.
21. Kelly, J., Heinert, K., Triplett, J., Baker, D., & Krause, S. (2010).Uncovering and repairing atomic bonding misconceptions with multimodal assessment of student understanding in an introductory materials course. *Proceedings of the American Society for Engineering Education,* Louisville, Ky.
22. Bueno-Watts, N., Baker, D., Lewis, E., Uysal, S., Yasar-Purzer, S., Wong, S., Perkins, R., Pineda, M., & Lang, M. (2009). From professional development to the classroom: What changes do students experience? *Proceedings of the National Association of Research in Science Teaching*, Garden Grove, CA.
23. Lewis, E., Baker, D., Lang, M., Helding, B. (2009) Using HLM to analyze on-going teacher professional development and classroom implementation. *Proceedings of the National Association of Research in Science Teaching,* Garden, Grove, CA.
24. Corkins, J., Kelly, J., Baker, D., Robinson-Kurpius, S., Tasooji, A. 7 Krause, S. (2009). Determining the factor structure of the materials –concept inventory (2009). *Proceedings of the American Society for Engineering Education,* Washington, DC.
25. \*Eliciting underserved middle-school youth’s notions of engineers: Draw an engineer.Ganesh, T., Thieken, J. Elser, M., Baker, d., Krause, S., Roberts, C., Robinson-Kurpius, S., Middleton, J. & Golden, J. (2009). *Proceedings of the American Society for Engineering Education,* Washington, DC.
26. Culbertson, R., Oehrtman, M., Thompson, J., Gardner, J., Mehrens, C., Baker, D. & Krause, S. (2009). Engineering design of musical instruments as a context for math Physics and technical writing in a freshman learning-community course. *Proceedings of the American Society for Engineering Education,* Washington, DC.
27. Kelly, J., Corkins, J., Baker, D., Tasooji, A., Krause, s. (2009).Using concept-building context modules with technology and 5 E pedagogy to promote conceptual change in materials science (2009). *Proceedings of the American Society for Engineering Education,* Washington, DC.
28. Baker, D., Lewis, E., Uysal, S., Yasar-Purzer, S., Lang, M., & Baker, P. (2008). Using the communication in Science Inquiry model to facilitate learning biology*. Proceedings of the National Association of Research in Science Teaching*, Baltimore, MD.
29. Lewis, E., Baker, D., Yasar-Purzer, S., Uysal, S., & Lang, M. (2008). Measuring

short term teacher learning of scientific classroom discourse communities*.*

*Proceedings of the National Association of Research in Science Teaching*,

Baltimore, MD.

1. Uysal, S., Yasar-Purzer, S., Baker, D., Lewis, E., & Lang, M. (2008). Teachers’

meaning-making during professional development of scientific classroom discourse communities. *Proceedings of the National Association of Research in Science Teaching*, Baltimore, MD.

1. Yasar-Purzer, S., Uysal, S., Baker, D., Lewis, E., 7 Lang, M. (2008). Teachers’ progress toward a modernist view of nature of science communication. *Proceedings of the National Association of Research in Science Teaching*, Baltimore, MD.
2. \*Baker, D., Krause, S., Yasar, S., Roberts, C. & Kurpius, S. (April, 2004). An intervention on tinkering and technical self-confidence, and the understanding of the social relevance of science and technology. *Proceedings of the National Association of Research in Science Teaching*, Vancouver, Canada.
3. Krause, S., Baker, D., Roberts, Robinson-Kurpius, S. & Yasar, S. (April, 2004).

Developing a course to infuse design engineering technology (DET) into curriculum: Understanding the role of DET in science instruction and classroom practice.

1. Robinson-Kurpius, S., Krause, S., Yasar, S., Roberts, C. & Baker, D. (April, 2004). Assessing design engineering technology in schools. *Proceedings of the National Association of Research in Science Teaching,* Vancouver, Canada.
2. Roberts, C., Krause, S., Kurpius, S., Baker, D. & Yasar, S. (April, 2004). A Star Wars Wand for the Blind, Tracking License Plates and a Smart Golf Club : Design Engineering Technology in Action. *Proceedings of the National Association of Research in Science Teaching*, Vancouver, Canada.
3. Robinson-Kurpius, S., Krause, S., Yasar, S., Roberts, C. & Baker, D. (April, 2004).Assessing design engineering technology in schools. *Proceedings of the National Association of Research in Science Teaching*, Vancouver, Canada.
4. Baker, D., Roberts, C., Krause*,* S. Garcia, A., Robinson Kurpius, S. Middleton, J., Evans, D., Anderson-Rowland, M., Banks, D., Gengler, C. & Yasar, S. (2003). “Designing a Graduate Education Course for Design, Engineering, and Technological Concepts for K-12 Teachers.” *2003 Frontiers in Education Conference Proceedings*, F1A-1-6.
5. Anderson-Rowland, M., Baker, D.. Banks, D., Crouch, P., Evans, D., Garcia, A., Gengler, C., Krause, S., Robinson Kurpius, S., Middleton, J., Roberts, C. Yasar, S. (2003). Design, Engineering, and Technological Expansion for K-12 Teachers*. 2003 ASEE Annual Conference Proceedings,* 1300-1313.
6. Baker, D. (1992). Learning science: Insights from research, teaching and assessment. In H-J. Schmidt (Ed*.), Proceedings of the Seminar on Empirical Research in Physics and Chemical Education* (pp. 9-22). Dortmund, Germany: The International Council of Associations for Science Education (ICASE).

## Paper Presentations

1. Baker, D. (2013). Celebrating Fifty years of JRST: Editors' Perspectives on its Past, Present, and Future. *Symposium presented at the annual meeting of the National Association for Research in Science Teaching*, Rio Mar, Puerto Rico.
2. Krause, S. & Baker D. (2012). Remodeling instructional materials for more effective learning in introductory materials classes. *Paper presented at the annual meeting of the American Society for Engineering Education,* San Antonio, TX.
3. Krause, S. & Baker, D. (2012). Crystal spatial visualization survey for introductory materials classes. *Paper presented at the annual meeting of the American Society for Engineering Education,* San Antonio, TX.
4. Sen, T., Baker, D., Bueno Watts, N., Perkins, G. & Lang, M. (2011). Changes in inquiry practices of English and science teachers over time*. Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
5. Perkins, G., Baker, D., Bueno Watts, N., Sen, T., Chaudhuri, D. & Lang, M. (2011). Arguments of CESIP students: Science versus English comparisons. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
6. Baker, D., Bueno Watts, Sen, Perkins, G. & Chaudhuri, D. (2011). The relationship of teacher implementation of professional development to student scientific explanations and grades. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
7. Sen, T., Baker, D., Bueno Watts, N., Perkins, G. & Lang, M. (2011). Changes in inquiry practices of English and science teachers over time. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
8. Perkins, G., Baker, D., Bueno Watts, N., Sen, T., Chaudhuri, D. & Lang, M. (2011). Arguments of CESIP students: Science versus English comparisons. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
9. Baker, D., Bueno Watts, Sen, Perkins, G. & Chaudhuri, D. (2011). The relationship of teacher implementation of professional development to student scientific explanations and grades. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
10. Bueno Watts, N., Baker, D., Perkins, G., Sen, Y., Chaudhuri, D. & Lang, M. (2011). Improving students’ scientific explanations skills through research-based professional development. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
11. Berg, C. & Baker, D. (2011). Benefits observed in the research laboratory setting don’t always generalize to the classroom setting. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Orlando, FL.
12. Sen, T., Baker, D. & Culbertson, R. (2011). The Impact of Summer Research Experience for Science Teachers on Classroom Instruction.  *Paper presented at the annual meeting of the Materials Research Society*, San Francisco, CA.
13. Tirupalavanam, G., Thieken, J., Baker, d., Krause, S., Roberts, C., Elser, M., Taylor, W., Golden, J., Middleton, J. & Robinson Kurpius, S. (2010). Learning through engineering design and practice: Implementation and impact of a middle school engineering education program. *Paper presented at the annual meeting of the American Society for Engineering Education,* Louisville, Ky.
14. Krause, S., Kelly, J., Baker, D. & Tassoji, A. (2010). An atomic bonding module for materials engineering that elicits and addresses misconceptions with concept-in-context multimodal activities, worksheets, and assessments. *Paper presented at the annual meeting of the American Society for Engineering Education,* Louisville, Ky.
15. Krause, S., Baker, D., Mehrins, C., Meyer, J. & Culbertson, R. (2010). Design and analyzing musical instruments as a gateway to mathematics, science and engineering for pre-service education students. *Paper presented at the annual meeting of the American Society for Engineering Education,* Louisville, Ky.
16. Kelly, J., Graham, A., Eller, A., Baker, D., Tassoji, A. & Krause, S. (2910). Supporting student learning, attitude and retention through critical class reflections. Paper presented at the annual meeting of the American Society for Engineering Education*,* Louisville, Ky.
17. Baker, D., Bueno Watts, N., Lewis, E. (2010). Creating scientific discourse communities in your classroom, Part 1 and Part 2 (NARST Session).   
    *Paper presented at the annual meeting of the National Science Teachers Association*, Philadelphia, PA.
18. Baker, D., Bueno Watts, N., Perkins, G. Sen, T., Lewis, E. & Lang, M. (2010). The effect of context and activities on teachers’ scientific explanations. Paper presented at the annual meeting of the National Association of Research in Science Teaching*,* Philadelphia, PA.
19. Perkins, G., Baker, D., Bueno Watts, & Lang, M. (2010). Growth in high school English teachers’ understanding of the science concept of energy. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, Philadelphia, PA.
20. Bueno Watts, N., Baker, D., Semken, S., Lang, M. (2010). Improving high school teachers’ content knowledge of energy in systems through research-based professional development. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Philadelphia, PA.
21. Sen, T., Bueno Watts, N., Perkins, G., Baker, D., Lang, M., Beard, R., Uysal, S., & Lewis (2010). The effect of implementing the CISIP model on students’ scientific explanations. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Philadelphia, PA.
22. Lewis, E., Baker, D., Helding, B. & Lang, M. (2010). Modeling professional development and classroom implementation of instructional strategies for building scientific classroom discourse communities (2010). *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Philadelphia, PA.
23. Ganesh, T. G., Thieken, J., Elser, M., Baker, D., Krause, S., Roberts, C., Kurpius-Robinson, S., Middleton, J., & Golden, J. (2009). Eliciting underserved middle-school youths’ notions of engineers: draw an engineer. *Paper presented at the annual meeting of the American Society for Engineering Education,* Washington, DC.
24. Ganesh, T. G., Thieken, J., Elser, M., Baker, D., Krause, S., Roberts, C., Kurpius-Robinson, S., Middleton, J., & Golden, J. (2009). Eliciting underserved middle-school youths’ notions of engineers: Draw an Engineer. *Paper presented at the annual meeting of the American Society for Engineering Education*, Austin, TX.
25. Ganesh, T. G., Thieken, J., Elser, M., Baker, D., Krause, S., Roberts, C., Kurpius-Robinson, S., Middleton, J., & Golden, J. (2009). Eliciting underserved middle-school youths’ notions of engineers: Draw an Engineer. *Paper presented at the annual meeting of the American Educational Research Association*, San Diego, CA.
26. Ganesh, T., Thieken, J., Baker, D., Kurpius, S., Elser, M., Krause, S. & Roberts, C. (2009). Understanding the impact of a year-round informal learning program: Learning through engineering design and practice*. Paper presented at the annual meeting of the American Educational Research Association*, San Diego, CA.
27. Culbertson, R., Oehrtman, M., Meyer, J., Gardner, J., Mehrens, C., Baker, D. & Krause, S. (2009). Engineering design of musical instruments as a context for math, physics and technical writing in a freshman learning community. *Paper presented at the annual meeting of the American Society for Engineering Education,* Austin, TX.
28. Beard, R., Lewis, E., Yasar-Purzer, S., & Uysal, S. (2009). The relationship between quality of teacher designed lesson plans and teaching*. Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Garden Grove, CA.
29. Baker, D., Bueno-Watts, N., Lewis, E, & Yasar-Purzer, S. (2009).The challenge of measuring fidelity of implementation of professional development. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Garden Grove, CA.
30. Bueno-Watts, N., Baker, D., Lewis, E., Uysal, S., Yasar-Purzer, S., Wong, S., Perkins, R., Pineda, M., & Lang, M. (2009). From professional development to the classroom: What changes do students experience? *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Garden Grove, CA.
31. Lewis, E., Baker, D., Lang, M., Helding, B. (2009) Using HLM to analyze on-going teacher professional development and classroom implementation*. Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Garden, Grove, CA.
32. Lewis, E., Kraft, K.J., Bueno-Watts, N., Baker, D., Wilson, M., Lang, M. (2009). Elementary Teachers' Conceptions of Flooding Before and After Professional Development. *Paper presented at the annual meeting of the American Educational Research Association*, San Diego, CA.
33. Lewis, E., Baker, D., Lang, M., Yasar-Purzer, S., Breard, R., Bueno-Watts, N., Wong, S., & Perkins, G. (2009,). Learning about and implementing scientific classroom discourse communities: An overview of research on the communication in science inquiry project (CISIP). *Paper presented at the annual Meeting of the Association of Science Teacher Educators*, Hartford, Conn.
34. Baker, D., Lewis, E., Yasar-Purzer, S., & Uysal, S. (2008). The Communication in Science Inquiry Project (CISIP)*.* NARST special session*. Paper presented at the regional meeting of the National Science Teachers Association*, Charlotte, NC.
35. Baker, D., Lewis, E., Uysal, S., Yasar-Purzer, S., Lang, M., & Baker, P. (2008). Using the communication in Science Inquiry model to facilitate learning biology*. Paper presented at the annual meeting of the National Association of Research in Science Teaching*, Baltimore, MD.
36. Lewis, E., Baker, D., Yasar-Purzer, S., Uysal, S., & Lang, M. (2008). Measuring

short term teacher learning of scientific classroom discourse communities. Paper

presented at the annual meeting of the National Association of Research in

Science Teaching, Baltimore, MD.

1. Uysal, S., Yasar-Purzer, S., Baker, D., Lewis, E., & Lang, M. (2008*).* Teachers’

meaning-making during professional development of scientific classroom discourse communities. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, Baltimore, MD.

1. Yasar-Purzer, S., Uysal, S., Baker, D., Lewis, E., 7 Lang, M. (2008*).* Teachers’ progress toward a modernist view of nature of science communication*. Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Baltimore, MD.
2. \*Baker, D., Krause, S., & Yasar-Purzer, S. (2008). Developing an instrument to measure tinkering and technical self-efficacy in engineering. Paper presented at the annual meeting of the American Society for Engineering Education, Pittsburgh, PA.
3. Yasar-Purzer, S., Roberts, C., & Krause, S. (2008). Development of a team interaction observation protocol and self-efficacy survey using social cognitive theory as a framework. *Paper presented at the annual meeting of the American Society for Engineering Education*, Pittsburgh, PA.
4. Morrell, D., Roberts, C., Baker, D., Krause, S., Ganesh, T., Beard, R., White-Taylor, J., Khosla, N., Pal, M., Kobra, J., & Vaidyanathan, M. (2008). Developing an open source high school text for engineering*.* *Paper presented at the annual meeting of the American Society for Engineering Education*, Pittsburgh, PA.
5. Baker, D. & Krause, S. (2007). Do tinkering and technical activities connect

engineering education standards with the engineering profession of today*? Paper*

*presented at the annual meeting of the American Society for Engineering*

*Education*, Honolulu, HI.

1. \*Yasar, S., Baker, D., Krause, S., & Roberts, C. (2007). In her shoes: How team

interactions affect engineering self-efficacy*. Paper presented at the annual meeting of the American Society for Engineering Education*, Honolulu, HI.

1. Uysal, S., Yasar, S., Baker, D., Kurpius-Robinson, S., Krause, & Roberts, C. (2007). Inside the classroom: Challenges to teaching engineering design in high school*. Paper presented at the annual meeting of the American Society for Engineering Education*, Honolulu, HI.
2. Ozdemir, G., Lewis, E. & Baker, D. (2007). Development and validity of the CISIP (Communication in Science Inquiry Project) classroom observation instrument. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, New Orleans, LA.
3. Baker, D., Lang, M., Yasar, S. & Ozdemir, G. (2007). The communication in science inquiry project (CISIP): lessons learned from professional development with secondary teachers. Paper presented at the annual meeting of the National Association of Research in Science Teaching, New Orleans, LA.
4. Baker, D., Yasar, S., Krause, S., Roberts, C. & Kurpius, S. (2006*).* An evaluation of a design, engineering, and technology course on high school students’ understanding of the design process. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, San Francisco, CA.
5. Baker, D., Yasar, S., Uysal, S., Kurpius, S., Krause, S. & Roberts, C. (2006). A mixed grade engineering course for high school students: Student interactions and understanding of engineering design. *Paper presented at the annual meeting of Frontiers in Education,* Indianapolis, OH.
6. \* Bang, E.J. & Baker, D. (2005). Korean high school students’ achievements, attitudes toward science and stereotypic images of scientists. *Paper presented at the annual meeting of the American Educational Research Association*, Montreal, Canada.
7. Butler, C., Watts, N., Neakrase, J., Escobar, R., Semken, S. & Baker, D. (2005). A pilot study of outcomes of a place-based activity in a large-enrollment introductory geology laboratory. *Paper presented at the annual meeting of the Geological Society of American,* Salt Lake City, UT.
8. Krause, S., Roberts, C., Baker, D., Yasar, S., Uysal, S. & Robinson-Kurpius, S. (2005). Navigating Rugged Terrain: Barriers and Benefits to Implementing an Elective Engineering Design Course in a High School Setting.*Paper presented at the annual meeting of Frontiers in Education*, Portland, OR.
9. Yaşar, Ş., Krause, S., Roberts, C., Baker, D., and Robinson-Kurpius, S. (2005).

Making the Case: Evaluating the Impact of a Design, Engineering, and Technology Course on K-12 Teachers’ Practice. *Paper presented at* the annual meeting of the American Society for Engineering Education, Portland, OR.

1. Baker, D., Yasar, S., Robinson-Kurpius, S., Krause, S. Roberts, C. (2004). Not Just for Nerds: Embedding Science Activities Within a Design, Engineering, and Technology (DET) Environment. *Paper presented at the annual meeting of Frontiers in Education,* Savannah, GA.
2. Baker, D., Yasar, S., Robinson-Kurpius, S., Krause, S. & Roberts, C. (2004). Developing a method to measure the metacognitive effects of a course in design engineering technology over time. *Paper presented at the annual meeting of the American Society of Engineering Education,* Salt Lake City, UT.
3. Baker, D. Krause, S., Roberts, C., Kurpius, S. & Yasar, S. (2004). Infusing design, engineering and technology into science instruction and classroom practice. *Paper presented at the annual meeting of the American Educational Research Association*, San Diego, CA.
4. \*Baker, D., Krause, S., Yasar, S., Roberts, C. & Kurpius, S. (2004). An intervention on tinkering and technical self-confidence, and the understanding of the social relevance of science and technology. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Vancouver, Canada.
5. Krause, S., Baker, D., Roberts, Robinson-Kurpius, S. & Yasar, S. (2004). Developing a course to infuse design engineering technology (DET) into curriculum: Understanding the role of DET in science instruction and classroom practice. *Paper presented at the annual meeting of the National Association of Research in Science Teaching,* Vancouver, Canada.
6. Roberts, C., Krause, S., Kurpius, S., Baker, D. & Yasar, S. ( 2004). A Star Wars Wand for the Blind, Tracking License Plates and a Smart Golf Club : Design Engineering Technology in Action. *Paper presented at the annual meeting of the National Association of Research in Science Teachin*g, Vancouver, Canada.
7. Robinson-Kurpius, S., Krause, S., Yasar, S., Roberts, C. & Baker, D. (2004). Assessing design engineering technology in schools. *Paper presented at the annual meeting of the National Association of Research in Science Teaching*, Vancouver, Canada.
8. \*Yasar, S. & Baker, D. (2003). Impact of involvement in a science fair on seventh grade students’ understanding of scientific method and attitudes towards science. *Paper presented at the annual meeting National Association for Research in Science Teaching,* Philadelphia, PA.
9. Baker, D., Piburn, M., Lemanowski, V., Labrae, A. (2003). The hidden earth part two: Group interactions and composition as a mediator for geo-visualization. *Paper presented at the* *annual meeting National Association for Research in Science Teaching*, Philadelphia, PA.
10. \*Scantlebury, K., Baker, D., Uysal, S. (2003). The cultural context of gender research in Japanese science education. *Paper presented at the annual meeting National Association for Research in Science Teaching*, Philadelphia, PA.
11. \*Scantlebury, K., Baker, D., Ayumi, S., & Atsushi, Y. (2002). The invisibility of gender in Japanese science education, *Gender and Science Education Colloquium*, New Orleans, LA.
12. \*Anderson-Rowland, M., Baker, D., Secola, P., Middleton, J., & Evans, D. (2002). Establishing engineering modules that attract young women in middle school and high school. *Paper presented at the annual meeting American Society of Engineering Education*, Montreal, Quebec.
13. \*Baker, D. (2002). Girls and young women in high-risk situations. *Paper presented at the annual meeting of Teacher Educators for Children with Behavioral Disorders*, Tempe, AZ.
14. \*Baker, D. (2002). Innovative assessment practices for classrooms that promote gender equity*.* Higashi, Hiroshima, Japan: *Paper presented at the* *Culture, Language, and Gender Sensitive Science Teacher Education Program International Cooperative Research Project*.
15. Baker, D. (2001). What we know about how children learn*. Paper presented at the National Forum on Thematic, Cross-Disciplinary Approaches to Scientific and Technological Literacy in K-12 Education*, Washington, DC.
16. Piburn, M. & Baker, D. (2001). An Effective Re-entry Program for

Individuals with Educational and Work Experience in Mathematics and Science.

*Paper presented at the annual meeting National Association for Research in Science*

*Teaching*, St. Louis, MO.

1. Lord, L., Baker, D., Brewe, E., Puglia, M., Okonwski, L. & Dumapias, F. (2001). Comparing alternative assessment procedures: Action research and constructivist graduate education*.* *Paper presented at the annual meeting of the National Science Teachers Association*, St. Louis, MO.
2. Lord, L., Baker, D., Brewe, E., Puglia, M., Okonwski, L. & Dumapias, F. (2000). Comparing alternative assessment procedures: Knowledge gained and lost*.* *Paper presented at the annual meeting of the National Science Teachers Association Southwest Regional Conference*, Phoenix, AZ.
3. Staley, F., Baker, D., Flores, A., Middleton, J., Cohen, H., Piburn, M. & Romero, M. (2000*).* Preparing middle/high school science/math teachers for the technology-oriented curriculum of the 21st century. *Paper presented at the annual meeting of the National Science Teachers Association Southwest Regional Conference*, Phoenix, AZ.
4. Baker, D. & Piburn, M. (2000). A study of career changes in science, mathematics, engineering and technology fields. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, New Orleans, LA.
5. \*Baker, D. (2000). The implications of gender research to Japanese science education reform*.* *Culture, Language and Gender Meeting*, Kobe, Japan.
6. \*Baker, D. (2000) An overview of gender research. *Culture, Language and Gender Meeting*, Kobe, Japan.
7. \*Baker, D. & Jacobs, K. (March, 1999). Winners and losers in single-sex science and mathematics classrooms*.* *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Boston, MA.
8. Baker, D., Cohen, H., Flores, A., Knaupp, J., Middleton, J., Piburn, M. & Staley, F. (1988). TEAMS: An integrated math, science and technology middle school program. *Paper presented at the annual meeting of the National Middle School Association*, Denver, CO.
9. \*Baker, D. Lindsey, R. & Blair, C. (1998). Girls summer lab: An intervention. *Paper presented at the annual meeting of the National Association for Research in Science Teaching,* San Diego, CA.
10. \*Baker, D. (1997). Equity issues in international science education*.* *International Conference on Science Mathematics and Technology Education*, Hanoi, Viet Nam.
11. Cohen, H., Piburn, M. & Baker, D. (1996, October). A new NSF-sponsored program to train science and mathematics teachers for middle school. *Paper presented at the annual meeting of the National Science Teachers Association Southwest Regional Conference,* Phoenix, AZ.
12. \*Baker, D. (1996). Girls and chemistry, is there a bond? *Paper presented at the 14th International Conference on chemistry Education*, Brisbane, Australia.
13. \*Baker, D. & Scantlebury, K. (1995). Introduction to the monograph "Gender equity and science education*.* *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
14. \*Baker, D. (1994*).* Evaluating curriculum through the lens of three gender equity frameworks. *Paper presented at the annual Regional meeting of the Rocky Mountain/Great Plains Social studies Conference*, Phoenix, AZ.

1. \*Baker, D. & Scantlebury, K. (1994). Preparing gender sensitive science teachers. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Anaheim, CA.
2. \*Baker, D. & Leary, R. (1993). Gender Equity Symposium: School and social influences on science attitudes. *Paper presented at the annual meeting of the National Association for Research in Science Teaching,* Atlanta, GA.
3. Stofflett, R. & Baker, D. (1992). The effect of training in combinatorial reasoning and propositional logic on formal reasoning ability. *Paper presented at the annual meeting, National Middle School Association,* San Antonio, TX.
4. Baker, D. (1992). Learning Science: Insights from research, teaching and assessment. *Meeting on Empirical Research in Physics and Chemical Education*, Dortmund, Germany.
5. \*Baker, D., Hill, M., Leary, R. Moffatt, N., Piburn, M., Sidlik, L., Trammel, R. & Wallin, M. (1992). Letting Students speak for themselves: Moving beyond quantitative assessments of attitudes toward science. *Paper presented at the annual meeting of the American Educational Research Association,* San Francisco, CA.
6. \*Trammel, R., Piburn, M. & Baker, D. (1992*).* Attitude toward science in children and adolescents: Implications for career development*.* *Paper presented at the annual meeting of the American Association for Counseling and Development,* Baltimore, MD.
7. \*Baker, D. Leary, R. & Trammel, R. (1992). Where are the gender differences in attitude toward science and what do they mean? *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Boston, MA.
8. Baker, D. & Piburn, M. (1992, February). I used to like science, but they ruined it for me. *Paper presented at the annual meeting of the Western Regional Middle School Conference,* Phoenix, AZ.
9. \*Baker, D., Leary, R. & Trammel, R. (1991). Myth or reality: Gender differences in science attitude. *Paper presented at the annual meeting of the Arizona Educational Research Association,* Flagstaff, AZ.
10. Baker, D. (1991). A summary of research in science education - 1989. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, The Abbey, Lake Geneva, WI.
11. \*Baker, D. (1991). Gender Differences in Science: Where they start and where they go (part I)*.* *Paper presented at the annual meeting, National Science teachers Association,* Houston, TX.
12. \*Baker, D. (April 1990). Gender differences in science: Where they start and where they go (part II)*.*  *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Atlanta GA.
13. \*Baker, D. (1989). Teaching for Gender Differences *Paper presented at* the annual meeting of the National Science Teachers Association, Seattle, WA.
14. Baker, D., Piburn, M. & Niederhauser, D. (1989*).* If I were the teacher...: Students’ attitudes toward the science curriculum*.* *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
15. Baker, D. Niederhauser, D. Stofflett, R. & O'Brien, D. (1989*). Science is art: Grounding the development of an attitude toward science measure in the constructs of students and teachers.*  *Paper presented at the annual meeting of the Northern Rocky Mountain Educational Research Association*, Jackson Hole, WY.
16. Piburn, M., Niederhauser, D. & Baker, D. (1989*).* What did you do in science class today? Children's perceptions of what they do in the classroom. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
17. \*Baker, D. & Niederhauser, D. (1989*).* Attitudes and stereotypes: Trends and transitions in K-12 science. *Paper presented at the annual Meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
18. Baker, D. & Piburn, M. (1988). Learning to think: A major factor in the decline in attitude toward science. *Paper presented at the annual meeting of the National Association for Research in Science Teaching,* Lake Ozark, MO.
19. Piburn, M., Baker, D. & Treagust, D. (1988). Misconceptions about gravity

held by college students. *Paper presented at the annual meeting of the National*

*Association for Research in Science Teaching*, Lake Ozark, MO.

101. Piburn, M. & Baker, D. (1988*).* Reasoning about logical propositions and success

in science. *Paper presented at the annual meeting of the American Educational*

*Research Association,* New Orleans, LA.

1. Baker, D. (1987). The preparation of elementary science teachers. *Paper presented*

*at the annual meeting of the National Science Teachers Association*, Salt Lake City,

UT.

1. \*Baker, D. (1987). Equity strategies for teaching science. *Paper presented at the annual meeting of the National Science Teachers Association*, Salt Lake City, UT.
2. Baker, D. & Piburn, M. (1987). The effects of a scientific literacy course on subsequent learning in biology*.*  *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Washington, DC
3. Baker, D. & Piburn, M. (1986). The results of a yearlong intervention on attitude and scientific literary skills*.* *Paper presented at the annual meeting of the Northern Rocky Mountain Educational Research Association*, Missoula, Montana.
4. \* Baker, D. (1986). The influence of sex role conflict and role-specific self-concept to course-taking behavior and career preferences in science *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
5. Baker, D. & Piburn M. (1985). A preliminary report on the effectiveness of a year‑long intervention to promote scientific literacy. *Paper presented at the annual meeting of the National Association for Research in Science Teaching,* French Lick Springs, IN.

1. \*Baker, D. (1984). Sex differences in teacher/pupil interactions in science classrooms*.*  *Paper presented at the regional meeting of the National Science Teachers Association*, Albuquerque, NM.
2. Saunders, W., Daugs, D. & Baker, D. (1984). Epistemological aspects of contemporary science instruction*.*  *Paper presented at the regional meeting of the National Science Teachers Association,* Albuquerque, NM.
3. Baird, H., Tolman, R., Baker, D. & Daugs, D. (1984. Utah model for assessing scientific literacy.  *Paper presented at the regional meeting of the National Science Teachers Association,* Albuquerque, NM.
4. \*Baker, D. (1984*).* An analysis of sex differences in the number and type of questions in secondary science classrooms. *Paper presented at the University of Utah Conference, Women in the 80's*. Salt Lake City, UT.
5. Baker, D., Piburn, M., Cotterell, S. & LeCavalier, J. (1984*).* The scientific literacy project. *Paper presented at the annual meeting of the Northern Rocky Mountain Research Association,* Jackson Hole, WY.
6. Baker, D., Sorgman, M. & McPhie, W. (1983 ). Models for teacher growth:  A comparison of three graduate programs.  *Paper presented at the annual meeting of the National Council for the Social Studies*, San Francisco, CA.
7. Baker, D. & Reynolds, R. (1983*).* The use of graphical material in science instructional software.  *Paper presented at the annual meeting of the American Educational Research Association,* Montreal, Canada.
8. \*Peterson, K., Burton, G., & Baker, D. (1983). Sex differences in perceptions of ideal and actual behavior and attitude among geometry students. *Paper presented at the* *annual meeting of the American Educational Research Association*, Montreal, Canada.
9. \*Baker, D. (1983). The relationship of attitude, cognitive ability and personality characteristics to science achievement in junior high school. *Paper presented at the annual meeting of the National Association for Research in Science Teaching*, Dallas, TX.
10. \*Baker, D. (1982). Cognitive and personality factors associated with success in science for biological and physical science majors. *Paper presented at the annual meeting of the National Association for Research in Science Teaching,* The Abbey, WI.
11. \*Baker, D. (1981). Cognitive and personality factors associated with success in science for biological and physical science majors. *Paper presented at the annual meeting of the American Educational Research Association*, New York, NY.
12. \*Baker, D. (1981). The differences among science and humanities males and

females*. Paper presented at the annual meeting of the National Association for*

*Research in Science Teaching*, New York, NY.

1. Leasure, D., Baker, D., & Lockwood, W. (1979). A method of scoring Piaget's

shadows test*.*  *Paper presented at the annual meeting of the National Association*

*for Research in Science Teaching,* Atlanta, GA.

1. Baker, D. & Van Harlingen, D. (1979*).* The relationship of Piagetian and Piagetian‑like tasks to physics achievement. *Paper presented at the* annual meeting of the National Association for Research in Science Teaching, Atlanta, GA.

Curriculum

1. Baker, D., Cotterell, S., LeCavalier, J. & Piburn, M. (1985). *Natural Science: A Computer Course for Junior High School Science.* Salt Lake City, UT: Wasatch Education Systems.
2. Iozzi, L., Chou, J. & Baker, D. (1980). *Food ‑ A Necessary Resource*.  New Brunswick : Rutgers University, The Institute for Science, Technology and Social Studies Education.
3. Iozzi, L., Chou, J. & Baker, D. (1980*). Space Encounters*. New Brunswick: Rutgers University: The Institute for Science, Technology and Social Studies Education.

Technical Reports

1. Baker, D., Bueno-Watts, N., Lewis, E., Ozdemir, G., Perkins, G., Uysal, S., Wong, S. & Yasar-Purzer, S. (2008). *Discourse in Inquiry Science Classrooms (DiISC): Reference Manual* (Tech. Rep. No. 001). Tempe, AZ: Arizona State University, The Communication in Science Inquiry Project (CISIP).
2. Piburn, M. & Baker, D. (2001). *Teacher Education for Arizona Mathematics*

*and Science (TEAMS)1996-2000: A Summative Evaluation*. (Tech. Rep. No.

PRG01-3). Tempe, AZ: Arizona Collaborative for Excellence in the

Preparation of Teachers.

1. Baker, D. & Piburn , M. (2000*). TEAMS evaluation 1996-98: Career Changes in Science, Mathematics, Engineering and Technology Fields* (Tech. Rep. No. PRG00-1B. Tempe, AZ: Arizona State University: Arizona Collaborative for Excellence in the Preparation of Teachers.
2. Lash, A., George, J., Baker, D., Haller, D., Lambert, V., Mergen­doller, J., Mittman, A., Peterson, K., Piburn, M., & St. Clair, G. (1984). *Portraits of Intermediate Science Classes.* San Francisco, CA: Far West Laboratories.

## Honors and Awards for Scholarly Work

1. \*Distinguished Contributions To Science Education Through Research, 2013, National Association for Research in Science Teaching
2. \*MaryLou Fulton Teachers College award for Research with Sustained Impact, 2012 for research in assessment and equity issues in science
3. \*Fellow, American Educational Research Association, 2009.
4. \*Fellow, American Association for the Advancement of Science for research and leadership in gender equity in science, 2004.
5. Mentorship Appreciation Award. Graduate College of ASU Preparing future Faculty Program, 2002, 2004.
6. \*Most influential research in the past 40 years of the *Journal of Research in Science Teaching* for Baker, D. & Leary, R. (1995). Letting girls speak out about science*. Journal of Research in Science Teaching, 1*, 3-27.(one of 12 articles selected).
7. Outstanding Research Award in Classroom Applications for Baker, D. Piburn, M. and Niederhauser, D. If I were the teacher: Students attitudes towards the science curriculum. National Association of Research in Science Teaching, San Francisco, CA 1989.
8. \*Outstanding Paper of 1988 published in *Science Education*, Award of Merit for Piburn, M. and Baker, D. Sex Differences in Formal Reasoning Ability: Task and interviewer effects.
9. Ten Best Papers Award for Baker, D. and Piburn, M. The results of a year-long intervention on attitude and scientific literacy skills. Northern Rocky Mountain Educational Research Association, Missoula, Montana, October, 1986.

## Special Projects

1. Principal Investigator, The Carnegie Initiative on the Doctorate. The Carnegie Foundation. One of 8 Departments of Curriculum and Instruction invited to join a collaboration on re-crafting doctoral education and research on doctoral education. ( no funds given for participation)

Funded Projects

1. Co-PI with S. Krause, A. Carberry, C. Chan, M. Koretsky, B. Gibbon, C. Waters, & J. Stuart. *Collaborative Research: Just-in-Time Teaching with Interactive Frequent Formative Feedback for Cyberlearning in Core Materials Courses*. National Science foundation, AY 2012-2015. Amount: $425,132.
2. Affiliated faculty with S. Panchanathan, C. Miller, V. Balasubramanian, M. Santello, F. Golshani, S. Pavri, & W. Dick. *Person-Centered Technologies and Practices for Individuals with disabilities.* National Science Foundation, AY 2011-2016. Amount: $3,000,000.
3. Principal Investigator with M. Lang. *Communication in Science Inquiry Project*. National Science Foundation, 7/2010- 12/ 2010. Amount: supplemental sub award $57,351.
4. Co-Principal Investigator with S. Krause, S. Kurpius, & A. Tasooji*. Understanding the Progression of Student Learning in Materials Courses Achieved through Conceptual Change of Nano-to-Macroscale Concept Models of Materials (CONCOMM****).*** National Science Foundation, AY 2008-2010. Amount: $495,000.
5. Co-Principal Investigator with R. Culbertson, M. Oehrtman, S. Krause, L. Dukerich, & J. Meyer. *Science and Engineering of musical Instruments: A context for Promoting Technical literacy and Problem solving Skills by Understanding Science, Technology, Engineering and Mathematics*. National Science Foundation, AY 2008-2010. Amount: $150,000.
6. Co-Principal Investigator with S. Krause, F. Sloane, & A. Tasooji. *Using Just-in Time Teaching to Promote conceptual change for student Learning and Understanding of Introductory Materials Science Engineering*. National Science Foundation, AY 2008-2010. Amount: $150,000.
7. Principal Investigator with M. Lang*. Communication in English and Science Inquiry Project for High School.* Arizona Board of Regents, AY 2008-2010. Amount: $164,361.
8. Principal Investigator with M. Lang & P. Baker. *Learning Science Content Through CISIP*. Arizona Board of Regents, AY 2007-2008. Amount $105,640.
9. \*Co-Principal Investigator with T. Ganesh, J. Middleton, S. Kurpius, & S. Krause. *Learning Through Engineering Design and Practice: Using Our Human Capital for an Equitable Future*. National Science Foundation, AY 2007-2010. Amount: $1,079,984.
10. Principal Investigator with M. Lang. *Communication in Science Inquiry Project*. Arizona Board of Regents, AY 2006-2008. Amount $224,665.
11. Co-Principal Investigator with C. Roberts, T. Ganesh, S. Krause & D. Morrell. *Development of Engineering Curricula for Ninth Grade to be Delivered Via On-Line Flex-Books*. CK-12 Foundation, AY 2006-2008. Amount: $55,865.
12. Principal Investigator. *Mathematics and Science Partnership-Maricopa Consortium for Science Literacy*. United States Department of Education, AY 2006-2007. Amount: $67,736.
13. \*Co-Principal Investigator with S. Semken, & K. Maunualito. *The Development of a Placed –Based Geology Course for Navajo Pre-Service Teachers*. Arizona Board of Regents, AY 2004-2005. Amount: $25,000.
14. Co-Principal Investigator with M. Lang, B. Goodman, J. Shaw, & D. Weaver. *Communication in Science Inquiry Project*. National Science Foundation, AY 2004-2009. Amount: $2,441,430.
15. Co-Principal investigator with P. Crouch, E. Garcia, J. Middleton, M. Anderson-Rowland, S. Krause, A. Garcia, D. Evans, C. Roberts, & S. Kurpius. *ASU Engineering and Education: DET Expansion for K-12 Teachers*. National Science Foundation, AY 2002-2003. Amount: $96,410.
16. Co-Principal investigator with A. Lawson, S. Wykoff, D. Hestenes, M. Carlson, J. Birk, H. Cohen, J. Knaupp, J. Mayer, M. Piburn, F. Staley, M. Zandieh & S. Reynolds. *Evaluation of the Arizona collaborative for Excellence in the Preparation of Teachers Project*. National Science Foundation, FY 2000-2003. Amount: $606,229.
17. \*Co-Principal Investigator with M. Anderson-Rowland, S. Blaisdell, V. Pizziconi, S. Houston, J. Adams, H. Reed, D. Rollier, C. Chakrabarti, D. Evans, P. Otting, A. Razdan, V. Burrows, J. Middleton, M. Piburn & A. Jannasch-Denali. *WISE Investments*. National Science Foundation, FY 1999-2002. Amount: $892,749.
18. \*Principal Investigator. *A case Study of Single-Sex Science and Mathematics Classrooms*. College of Education Intramural Research Funding, 1998. Amount: $4,000.
19. \*Co-Principal Investigator with S. Blaisdell, M. Anderson-Rowland, V. Pizziconi. & D. Rollier. *WISE Investments*. Arizona Board of Regents Eisenhower Mathematics and Science Education Act, FY 1998. Amount: $ 49,500.
20. Co-Principal investigator with S. Wykoff, J. Burke, M. Carlson, H. Cohen, A. Garcia, D. Hestenes, A. Lawson, J. Mayer, D. McLaughlin, J. Mildrew, M. Piburn, S. Reynolds & F. Staley. *Science and Mathematics Education Center.* Arizona State University Office of the Provost, strategic initiative, FY 1998. Amount: $ 400,000.
21. Co-Principal Investigator with S. Wykoff, H. Cohen, M. Piburn, F. Staley, S. Reynolds, J. Bustosz, A. Lawson, J. Mayer, A. Garcia, D. Hestenes & J. Burke*. Arizona Collaborative for Excellence in Preparation of Teachers*. National Science Foundation, FY 1995-2000. Amount: $ 4,985,716.
22. \*Co-principal Investigator with M. Piburn. *Trends and Transitions in Gender Differences in Attitude Toward Science*. Arizona State University ASH Grant, FY 1990-1991. Amount: $7,000.
23. Principal Investigator. *A Review of Research in Science Education -1988*. National Association for Research in Science Teaching, 1991-92. Amount: $5,000.
24. \*Principal Investigator. *Nonsexist and Multicultural Approaches to Teaching Science in the Elementary School*. Utah Board of Regents, 1985 - 1986.  Amount: $21,822.
25. \*Principal Investigator. *Factors Affecting Females' Attitudes Toward Science*. University of Utah Women's Studies Program, 1985-1986. Amount: $500.
26. \*Principal Investigator. *Personality and Cognitive Factors Affecting Gender Differences in Middle School Students Attitude Toward Science*. Castle Foundation, 1984-1985. Amount: $2,500.
27. Co-Principal Investigator with M. Piburn. *The Development and Effects of a Scientific Literacy Course for 9th Grade Students*. Wasatch Educational Systems, 1984-1985. Amount: $12,000.
28. Principal Investigator. *An Investigation of the Effect of Graphs on Science Text Comprehension*. Graduate School of Education, University of Utah, 1982-83.  Amount:  $2,430.

Proposals Under Review

1. Principal Investigator with S. Semken, E. Lyon, M. Orchnik, R. Culbertson. *Science Teacher Education Model for Arizona (STEM:AZ*). Submitted to the National Science foundation Noyce Phase II. Amount: $800,000.

Workshops

1. Baker, D. & Pacheco, H. (2012). A cognitive model for implementing knowledge: moving research into practice. *Workshop presented at the annual meeting of the National Association of Research in Science Teaching,* Indianapolis, IN.

## Invited Addresses

1. Baker. D. (2012). Science in Context: A Panacea or a Pipedream*. Consortium for Science, Policy and Outcomes Enlightening LUNCH series*, Arizona State University, Tempe, AZ.

1. Baker, D. (2012). A Cognitive Model for Implementing Knowledge: Moving Research into Practice Through Professional Development*. Engineering Education and Earth and*

*Atmospheric Science Seminar Series,* Purdue University, West Lafayette IN.

1. Baker, D. (1999). Frameworks and challenges. *Gender and Science Education Colloquium*, Boston, MA.
2. Baker, D. (1992). Girls and Science: Are Schools the Problem? *Institute for Ecological Studies*, Millbrook, NY.
3. Baker, D. (1991). Choosing Science: Brick Walls and Glass Ceilings. *Annual Meeting of the Association of Science-Technology Centers*, Louisville, KY.

1. Baker, D. (1985). Women in Science and Mathematics. *Western Australian Institute of Technology* (now Curtin University), Perth, Australia.

Baker, D. (1982). Women in Science. *Women's Resource Center Seminar Series*, University of Utah, Salt Lake City UT.

PROFESSIONAL SERVICE

Advisory Board

1. Advisory board member for NSF funded project - Recruiting and Retention of Women in Geosciences: an Investigation of Individual and Environmental Factors (PI Julie Sexton) 2012-2015

Editorial Board and Editor Activities

1. Editorial Board, Journal of Engineering Education (2010- present)
2. Editorial Board, Eurasian Journal of Educational Research (2004-2009)
3. Editorial Board, Science and Technology Education Library Book Series, Kluwer Press, (1998-2000)
4. Editorial Board of Journal for Research in Science Teaching (1987-1990)
5. Co-Editor, Journal of Research in Science Teaching (2001-2006)
6. Editor - International Handbook of Research in Science Education (1997). Section 8: Equity.

Manuscript Reviewer

1. Reviewer – International journal of Learning and Technology ( 2012 - present)
2. Reviewer – Journal of Engineering Education ( 2006-present)
3. Reviewer –International Journal of Science Education (2008-present)
4. Reviewer - Science Education (2010- present)
5. Reviewer - International Journal of Science Education (2012- present)
6. Reviewer - Journal of Research in Science Teaching (1993-present)
7. Reviewer- Journal of Women and Minorities in Science and Engineering, (1993-2005)
8. Reviewer - The Journal of Teaching and Teacher Education (2005)
9. Reviewer - Contemporary Educational Psychology (1991)
10. Reviewer - School Science and Mathematics (1984 – 1987)

NAEP Reviewer

1. Reviewer ‑ Science Section, National Assessment of Educational Progress (1983)

Conference Proposal Reviewer

1. Proposal reviewer –American Association for the Advancement of Science annual meeting paper proposals (2012)

Grant Proposal Reviewer

1. National Science foundation of Israel research proposals (2011)
2. National Science Foundation research proposals (1991, 2004-2005)
3. Australian Department of Education research proposals (1997-1999)

Outside Reviewer for doctoral dissertations

1. Outside reviewer for doctoral dissertations in engineering education, Tufts University (2008)
2. Outside reviewer for doctoral dissertations, Australian Universities 1985, 1997,

(1999)

National Committees

1. National Association for Research in Science Teaching

**Member:**

Membership and Elections (2012 -2015)

Distinguished Contributions through Research Award Committee (2010-2012)

Research Committee (2008-2011)

Governing Board *JRST* editor (2001-2006)

Membership Recruitment and Retention (1994 -1997)

Program Committee (1993 -94 & 1989-1990)

Dissertation Award Committee (1992-1995, 1997 – 2000)

Elections Nominations Committee (1990-1991)

Best Paper Awards Committee (1985-1986)

Best Journal Article Awards Committee (1983-1984)

**Chair and Founder:**

Equity Committee (1992-1995)

1. American Association for Engineering Education

**Member:**

Wickenden Award Selection (2010)

Best Paper Committee in the *Journal of Engineering Education* (2010)

State Committees

1. State department of Education

**Member:**

Curriculum Frameworks Grant Project- Content (1994-1995)

Arizona National Science Scholarship Screening Panel (1994)

**Co-Chair:**

\*Curriculum Frameworks Grant Project - Equity & Access (1994- 1995)

2. Phoenix Urban Systemic

**Member:**

Management Leadership Team (1994 – 1996)

Science Curriculum Committee (1994)

Arizona State University Committees

1. PROGRAM

**Member:**

Secondary Education Comprehensive Exam Committee (1991-1993)

1. DEPARTMENT

**Chair:**

Science Education Search (2012)

Teacher Education Endowed Chair (2010-2011)

Curriculum and Instruction PhD Committee (2010-2011)

Science Education Search (2010)

Science Education Search (2002-2004)

Personnel Committee (1999 – 2002, 2007-2008)

Secondary Search (1999)

**Member:**

Biology Education Search (2012)

Engineering Education Search (2009)

Ed. D. Steering Committee (1989-2000, 2004, 2008)

Self-Study Committee (1989-2000)

Multi-Position Search Committee (1989)

NCATE Committee (1989)

Personnel Committee (1984 -1998, 2003-2004, 2007-2008)

Multi-Position Search Committee (1996)

Interdisciplinary PhD Steering Committee (2004, 2008)

Master Degree committee (2004)

1. COLLEGE

**Leadership:**

Senator-at-Large (2002-2004, 1994 -199, 1991-1992)

President of the Faculty Assembly (2001-2002)

President elect of the College Council (2000-2001)

**Member:**

College Council (2002-2003)

Resource Allocation (1996, 1999)

College Council (1997-1999)

Research Committee (1993-1994)

Personnel Committee (1993-1994)

Professional Field Services Advisory Board (1992-1993)

Affirmative Action (1998)

**Chair and Co-Chair:**

Learning and Technology Search (1997 – 1998)

Curriculum Committee (1996)

Grievance Committee (1995-1996)

1. UNIVERSITY

**Member:**

University Promotion and Tenure Committee (2010-2013)

School of Life Science Search Committee (2012)

Center for Research on Education in Science, Mathematics, Engineering

and Technology (CRESMET) Faculty Advisory Board (2008-2010)

Academic Senate Consultative Committee (2002-2004)

Physics Education Search (2002)

Martin Luther King Committee (1997 – 1998)

Committee for Approval of Program Change (1986)

IRB (Institutional Review Board) (1983 -1997)

Interdisciplinary Ph.D. Board (1982-83, 1996)

Senate Oversight Committee for Research (1991-1992)

Secondary Education Council (1989-1991)

1. OTHER SERVICE

Expert Witness Federal Discrimination Case 2001-2002

Evening with the President 1997

Graduate College Representative for Dissertation Defenses 1992-2001

AIM-net Elementary Foreign Language Conference 1990

University of Utah Committees

1. DEPARTMENT

**Chair and Co-Chair:**

Certification Committee (1986-1987)

Science Education Search Committee (1986, 1983)

Admissions Committee, Elementary Education 1984‑85

**Member:**

Graduate Committee (1985-86, 1989)

Scholarship Committee (1985-1987)

Merit Review Committee (1982‑1983)

Program Evaluation Committee (1982)

Program Committee (1982)

Degree Review Committee (1982)

1. COLLEGE

**Member:**

College Retention Promotion and Tenure Committee (1988)

Convocation (1987)

Executive Committee (1985 & 1989)

Dean's Advisory Council (1983-1985)

Convocation Committee (1982)

1. UNIVERSITY

**Member:**

IRB (Institutional Review Board) (1985-1989)

Martin Luther King Celebration Committee (1985)

Math/Science and Engineering Committee (1984)

Liaison between the Math/Science Network and University of Utah (1984-1988)

Teaching

Special Topics in Science Education

Doctoral Colloquium in Science Education

Research Seminar in Science Education

Introduction to Research

Assessment in Science

Teaching for Equity in Science

Science and Culture

Elementary Science Methods

Doctoral Students and Current Positions (names alphabetical)

Fatimah Alhashem (Kuwait University)

Sibel Bahbah (Florida State University)

Nievita Bueno-Watts (Oregon Health and Science University)

Cheryl Berg (Maricopa Community College District)

Kay Ferris (Arizona State University)

Jacquelyn Kelly (Maricopa County Education Service Agency)

Arlisa LaBrae (Maricopa Community College District)

Rosemary Leary (Maricopa Community College District)

Elizabeth Lewis (University of Nebraska)

Dale Niederhauser (Iowa State University)

Gita Perkins (Maricopa Community College District)

Lisa Reid (Phoenix Country Day School)

Asmaa Shebeer (Mesa School District)

Tina Skerping (Salt River Project Education Outreach)

Rene Stofflett (academic publishing)

Jan Snyder (Arizona State University, retired)

Stephanie Touchman (University of California, Davis)

Darlene Weddington-Clark (Tempe Union School District)

Senay Yasar-Purzer (Purdue University)

Consulting

Universal Studios (2000-2002)

Mesa School District (1999)

Chandler School District (1998)

Navajo Community College 1996

Motorola (1995)

\*Mid-Continental Labs & Girl Scout Council of Kansas City (1993-1999)

\*Fort Worth Museum of Science and Technology (1993-1996)

Scottsdale School District (1992-1993)

Wasatch Educational Systems(1983-1984)

Far West Laboratories, Junior High School Science Project (1983‑1984)

Pro bono workshops

National Board Certified Teachers Program (1999)

\*Equity and Science Teaching, Phoenix Union District (1998)

\*Equity and Science Teaching, Chandler District (1998)

Constructivism, Urban Systemic Initiative (1997)