

## **MARIANNE WISER**

Department of Psychology  
Clark University  
Worcester, MA 10610  
508-793-7263

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### **EDUCATION**

Universite de Liege, Belgium, Engineer in Physics, 1972  
Universite de Liege, Belgium, Bachelor in Oceanology, 1973  
Massachusetts Institute of Technology, Doctor of Philosophy in Psychology & Brain Science, 1981

### **HONORS AND FELLOWSHIPS**

Laureate du Concours National de l'Academie des Beaux Arts de Belgique  
Belgian American Educational Foundation Fellowship, 1973-1974  
Rotary Fellowship, 1974-75  
American Association of University Women Fellowship, 1979-1980  
1985 Bergmann Memorial Research Grant. This is the grant given by the US-Israel Binational Foundation to an American researcher who has submitted a proposal to the Foundation.

### **PROFESSIONAL EXPERIENCE**

Visiting Scholar in Psychology, Harvard University 2006-2007  
Associate Professor, Clark University, 1990-  
Assistant Professor, Clark University, 1982-1990  
Research Associate, Harvard University, 1989-1995  
Technology Center Associate, Education Technology Center, Harvard University, 1988  
Associate in Education, Harvard University, 1986-87  
Head of the "Heat and Temperature Project," Educational Technology Center, Harvard Graduate School of Education, Cambridge, MA, 1984-1988  
Affiliate Fellow, Center for Cognitive Science, Massachusetts Institute of Technology (MIT) 1984-85, 1985-86  
Post-Doctoral Fellow Massachusetts Institute of Technology, Center for Cognitive Science, 1981

### **PUBLICATIONS**

#### In preparation:

Wiser, M., Fundamental concepts, challenges, and activities for a K-12 curriculum on matter.

Trionfi, G., **Wiser, M.**, & Amsel, E. The imagination of adults: Continuity with children explored.

Wiser, M., & Bullock, M. Alphabetic insight in young children.

Wiser, M., Leyva, D., Marcin, R., & Hayden, C. Young children's understanding of maps and

models: The importance of intentionality.

Wiser, M., & Srivastava, S. Understanding of script in a unique population of symbol users.

Wiser, M. Symbolic representations and conceptual change: How measurement, modeling, visual representations, and language change physical concepts.

Wiser, M. & Smith, C.L. (in press). Learning and teaching about matter in grades K-8: When should the atomic-molecular theory be introduced? In S. Vosniadou (Ed.), *Handbook of research on conceptual change*. Mahwah, NJ. Lawrence Erlbaum Associates.

Smith, C.L., **Wiser**, M., Anderson, C.W., Krajcik, J. (2006). Implications of research on children's learning for standards and assessment: A proposed learning progression for matter and the atomic molecular theory. Focus Article. *Measurement: Interdisciplinary Research and Perspectives*, 14, 1-98.

Smith, C.L., **Wiser**, M., & Anderson, C.W. (2006). Response to commentators. *Measurement: Interdisciplinary Research and Perspectives*, 14, 127-133.

Smith, C., **Wiser**, M., Anderson, C., Krajcik, J., & Coppola, B. (2005). Implications of research on children's learning for assessment: Matter and atomic molecular theory. Paper commissioned by the National Research Council's Committee on K-12 Test Design for Science Achievement. Funding for the Committee was provided by the National Science Foundation.

McMenamy, J.M., Perrin, E., & **Wiser**, M. (2005). Age-related differences in how children with ADHD understand their condition: Biological or psychological causality? *Journal of Applied Developmental Psychology* 26 (2) , 111 – 131.

Smith, C., **Wiser**, M., Anderson, C., Krajcik, J., Coppola, B., & Champagne, A. (2004). Interim report on linking research on student reasoning about matter to assessment. Paper commissioned by the National Research Council's Committee on K-12 Test Design for Science Achievement. Funding for the Committee was provided by the National Science Foundation.

Wiser, M., & Amin, T. (2002). Microworld-based interactions for conceptual change in science. In M. Limon & L. Mason (Eds.), *Reconsidering conceptual change. Issues in theory and practice* (pp. 357-388). Dordrecht/London: Kluwer Academic Publishers.

Wiser, M., & Amin, T.G. (2001). Is heat hot? Inducing conceptual change by integrating everyday and scientific perspectives on thermal phenomena. L. Mason (Ed.) Instructional practices for conceptual change in science domains [Special Issue]. *Learning & Instruction*, 11, 331-355.

Wiser, M (1995). Use of history of science to understand and remedy students' misconceptions about heat and temperature. In D. N. Perkins, J. L. Schwartz, M.M. West, & M.S. Stone (Eds.) *Software goes to school: Teaching for understanding with new technologies* (pp. 23-38). New York: Oxford University Press.

- Wiser, M. (1994). Die differenzierung von warne und temperatur. Die geschichte der naturwissenschaftler und die entwicklung vom laien zum experten. In G. Dux & U. Wenzel (Eds.), *Der prozeB der geistesgeschichte: Studien zur ontogenetischen und historischen entwicklung des geistes*. Frankfurt, Germany: Suhrkamp.
- Wiser, M., Grosslight, L., & Unger, C. (1989). *Can conceptual computer models aid ninth graders' differentiation of heat and temperature?* Cambridge, MA: Educational Technology Center, Harvard Graduate School of Education.
- Wiser, M. (1988). The differentiation of heat and temperature: History of science and novice-expert shift. In S. Strauss (Ed.), *Ontogeny, phylogeny, and historical development* (pp.28-48). Norwood, NJ: Ablex Publishing Company.
- Wiser, M., Kipman, D., & Halkiadakis, S. (1988). *The differentiation of heat and temperature: An evaluation of the effect of microcomputer models on students' misconceptions*. Cambridge, MA: Educational Technology Center, Harvard Graduate School of Education.
- Wiser, M. (1986). *The differentiation of heat and temperature: An evaluation of the effect of micro-computer teaching on students' misconceptions*. Cambridge, MA: Educational Technology Center, Harvard Graduate School of Education.
- Wiser, M. (1985). *Designing a micro-computer based laboratory to induce the differentiation between heat and temperature in ninth-graders*. Cambridge, MA: Educational Technology Center, Harvard Graduate School of Education.
- Smith, C., Carey, S., & **Wiser**, M. (1985). On differentiation: A case study of the development of the concepts of size, weight and density. *Cognition*, 21, 177-237.
- Wiser, M. (1984). *Children's concepts of heat and temperature: Developing a micro-computer teaching intervention and an assessment procedure*. Cambridge, MA: Educational Technology Center, Harvard Graduate School of Education.
- Wiser, M. & Carey, S. (1982). When heat and temperature were one. In D. Gentner & A. Stevens (Eds.), *Mental models*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Betz, M., Nihoul, J., & **Wiser**, M. (1973). *Etude de la thermocline dans la Baie de Calvi*. Cahiers de Mecanique Analytique. Universite de Liege.

## GRANTS

In preparation: Playing with symbols. A pre-school curriculum.

Differentiation and theory change in thermal physics: The role of conceptual models and metaconceptual understanding. M. Wiser, (Principal Investigator). Funded by the National Science Foundation for 1989-1995. (Amount: \$620,000). Contract #MDR89-50-333.

Teaching for conceptual change in middle school science: The role of models and of metaconceptual understanding. M. Wiser, (Principal Investigator), C. Smith, and S. Carey. Funded by the James S. McDonnell Foundation for 1988-1990. (Amount: \$247,000). Contract #87-38.

The development of the concepts of heat and temperature. 1985 Bergmann Memorial Research Grant given by the United States-Israel Binational Foundation.

The development of the concepts of heat and temperature. Proposal #84-00347. Funded by the United States-Israel Binational Science Foundation for three years: September 1985-1988. In collaboration with S. Strauss and S. Carey.

Conceptual changes in children and scientists. Funded by NSF-NIE 1979-1981, S. Carey (Principal Investigator), N. Block, C. Smith and M. Wiser.

Clark University Faculty Development Fund (intramural)  
(1985, 1992, 1997)

The development of symbolic understanding in pre-schoolers (2006)

Hiatt School Fund Grant (intramural). In collaboration with Pamela Polizzi (1994); in collaboration with Kathryn Kavavaugh (2001); in collaboration with Doga Somnez (2006)

## **INVITED COLLOQUIA and KEYNOTE ADDRESSES**

Wiser, M. (2006). Early symbolic development. Colloquium. Harvard University. Laboratory for Developmental Studies.

Wiser, M. (2006). Teaching science with and about models: Conceptual and metaconceptual Issues. Colloquium. Fulcrum Institute. Tufts University

Wiser, M. (2004, May). Learning science with models as interaction between content, mathematical, epistemological, and meta-cognitive knowledge. Keynote address. Fourth European Symposium on Conceptual Change. European Association for Research on Learning and Instruction. Delphi, Greece.

Wiser, M. (1994, June). Interactions between mental models and teaching models in physics learning. Colloquium. Georgia Institute of Technology, Atlanta, GA.

Wiser, M. (1992). Strategies for inducing conceptual change in science students. Presented to the Science Education Panel, Harvard/Smithsonian Observatory, Harvard University.

Wiser, M. (1989). Computer models for conceptual change. Colloquium. Stanford University School of Education, Stanford, CA.

Wiser, M. (1988). Conceptual change in physics: Successes and failures in inducing

differentiation between heat and temperature in high school students. Colloquium. University of Pittsburgh, Learning Research and Development Center, Pittsburgh, PA.

Wiser, M. (1986). Teaching thermal physics with computer-based models. Harvard University School of Education.

## PRESENTATIONS

Leyva, D. & **Wiser**, M. (2007, May-June). *Preschooler's understanding of the communicative nature of written symbols*. Poster to be presented at the Annual Meeting of the Jean Piaget Society. Amsterdam, the Netherlands.

Wiser, M., & Sonmez, D. (2007, May-June). *Cardinality, Counting to Compare, and Number Notations*. Paper to be presented at the Annual Meeting of the Jean Piaget Society. Amsterdam, the Netherlands.

Sonmez, D., & **Wiser**, M. (2007, March-April). *The development of cardinality and of number notations in Turkish pre-schoolers*. Poster to be presented at the Biannual Meeting of the Society for Research in Child Development. Boston.

Leyva, D. & **Wiser** (2007, March-April). Paper to be presented at the Biannual Meeting of the Society for Research in Child Development. Boston.

Sonmez, D., & **Wiser**, M. (2006, July). *Inducing the understanding of alphabetic principle by teaching arbitrary symbols*. Poster to be presented at the 9<sup>th</sup> JURE Annual Meeting. Tartu, Estonia. J.

Leyva, D., & **Wiser**, M. (2006, June). *Drawing and reading simple maps in four-year-olds: Exploring a new symbolic domain*. Poster presented at the Annual Meeting of the Jean Piaget Society. Baltimore, MD.

Wiser, M., Bullock, M., & Guerette, M. (2006, June). *The Acquisition of the Alphabetic Principle in Tutored and Untutored Situations*. Paper presented at the Annual Meeting of the Jean Piaget Society. Baltimore, MD.

Hayden, C., Marcin, R., & **Wiser**, M. (2005, April). *Early understanding of maps in children with personal symbols*. Poster presented at the Biennial Meeting of the Society for Research in Child Development. Atlanta, GA.

Leyva, D. & **Wiser**, M. (2005, April). *Intentionality and correspondence in young children's understanding of simple maps vs. 3-D models*. Poster presented at the Biennial Meeting of the Society for Research in Child Development. Atlanta, GA.

Smith, C., **Wiser**, M., Anderson, C., & Krajcik, J. (2005, March-April). Paper presented at the National Science Teacher's Association Meeting as part of a Professional Development Institute sponsored by the Lawrence Hall of Science. Dallas, TX.

- Wiser, M. (2004, July). A Socio-constructivist perspective on the internalization of microworlds. Paper presented in Symposium *Cognitive Constructivism in Socio-Cultural Learning*. International Society for Study of Behavioral Development. Ghent. Belgium.
- Srivastava, S., **Wiser**, M. & Kavanaugh, K (2004, July). The emergence of the stands-for relation in a unique population of symbol users. Paper presented in a Symposium *International Society for Study of Behavioral Development*. Ghent. Belgium.
- Wiser, M. (2004, July). How middle-school science students internalize microworlds: The role of intentionality. Paper presented in Symposium *Cognitive Constructivism in Socio-Cultural Learning*. International Society for Study of Behavioral Development. Ghent. Belgium.
- Srivastava, S., **Wiser**, M. & Kavanaugh, K (2004, July). The Emergence of the stands-for relation in a unique population of symbol users. Paper presented in a Symposium *International Society for Study of Behavioral Development*. Ghent. Belgium.
- Wiser, M. (2004, June). Epistemological and metacognitive issues in learning physics with microworlds. Paper presented in a Symposium *Representation and Reality: Development of Children's Understanding of Symbols, Models, and the Worlds they Depict* (organizer: E. Amsel). Annual Meeting of the Jean Piaget Society. Toronto, Canada.
- Srivastava, S., **Wiser**, M., and Trionfi, G. (2004, June). This is my symbol!: Do personal symbols enrich symbolic understanding of preschoolers? Paper presented in a Symposium *Representation and Reality: Development of Children's Understanding of Symbols, Models, and the Worlds they Depict* (organizer: E. Amsel) Annual Meeting of the Jean Piaget Society. Toronto, Canada.
- Wiser, M. (2004, June). Epistemological and metacognitive issues in learning physics with microworlds. Paper presented in a Symposium *Representation and Reality: Development of Children's Understanding of Symbols, Models, and the Worlds they Depict* (organizer: E. Amsel). Annual Meeting of the Jean Piaget Society. Toronto, Canada.
- Srivastava, S., **Wiser**, M., and Trionfi, G. (2004, June). This is my symbol!: Do personal symbols enrich symbolic understanding of preschoolers? Paper presented in a Symposium *Representation and Reality: Development of Children's Understanding of Symbols, Models, and the Worlds they Depict* (organizer: E. Amsel) Annual Meeting of the Jean Piaget Society. Toronto, Canada.
- Wiser, M. (2004, May). Discussant *Symposium on Connectionism*. Fourth European Symposium on Conceptual Change. European Association for Research on Learning and Instruction. Delphi, Greece.
- Wiser, M. (2004, May). Discussant Symposium on Epistemological Learning.. Fourth European Symposium on Conceptual Change. European Association for Research on Learning and Instruction. Delphi, Greece.
- Coppola, B., Anderson, C., & **Wiser**, M. (2004, May). Linking Research on Student Reasoning

about Matter to Assessment . Report to the Committee on Test Design for K-12 Science. National Academies of the Sciences. Washington, DC.

Wiser, M. (2004, May). A socio-constructivist perspective on the internalization of microworlds. Invited paper in a Symposium on *Conceptual Change in Physics* (Organizers G. Petersson and O. Hallden.) Fourth European Symposium on Conceptual Change. European Association for Research on Learning and Instruction. Delphi, Greece.

Wiser, M. (2004, May). Learning science with models as interaction between content, mathematical, epistemological, and metacognitive knowledge. Keynote address. Fourth European Symposium on *Conceptual Change*. European Association for Research on Learning and Instruction. Delphi, Greece.

Coppola, B., Anderson, C., & **Wiser**, M. (2004, May). Linking Research on Student Reasoning about Matter to Assessment . Report to the Committee on Test Design for K-12 Science. National Academies of the Sciences. Washington, DC.

Srivastava, S., & **Wiser**, M. (2003, October). *Understanding the arbitrariness of written word: Does experience with personal symbol system help?* Poster presented at the Biennial Meeting of the Cognitive Development Society. Park City, Utah.

Trionfi, G., & **Wiser**, M. (2003, October). *Fictional worlds and individual differences: Support for continuity?* Poster presented at the Biennial Meeting of the Cognitive Development Society. Park City.

Wiser, M., & Amin, T. (2003, August). *Microworlds Meet Cultural Cognition*. Invited paper presented at the Biennial Meeting of the European Association for Research in Learning and Instruction, Padua, Italy.

Thompson, **Wiser** & Valsiner (2002). Group selection and individual gullibility. International society for Human Ethology. Montreal

Wiser, M. (1999, August). Outcomes of research on conceptual change. Invited Panel Discussion organized by M. Limon and L. Mason. 8<sup>th</sup> Meeting of the European Association of Research on Learning and Instruction. Goteborg, Sweden.

Wiser, M. (1999, April). *Learning Thermal Physics: Commonalities and Differences with Conceptual Change in Children and Scientists*. Biennial meeting of the Society for Research in Child Development. Albuquerque, NM.

Wiser, M. (1998, November). Conceptual models and metaconceptual lessons foster learning in thermal physics. Second European Symposium on *Conceptual Change*. Madrid, Spain.

Wiser, M., & Amin, T. (1998, June). Routes to ontological change in science. Paper presented at the Twenty-Eighth Annual Symposium of the Jean Piaget Society, Chicago, IL.

- Wiser, M. (1998, April). *How Conceptual Models and Metaconceptual Teaching Can Overcome Incommensurability: A Microgenetic Study of Conceptual Change*. Annual Meeting of the American Educational Research Association, San Diego.
- McMenamy, J., & Wiser, M. (1997, April). *Germ and Fold Theories: Young Children's Understanding of the Causes, transmission, and Treatment of Illness*. Paper presented at the Biannual meeting of the Society for Research in Child Development, Washington, DC.
- McMenamy, J., & Wiser, M. (1997, April). *Young Children's Understanding of Illness, Contagion, and Medication*. Paper presented at American Education Research Association.
- Wiser, M. & Amin, T. (1997, June). *Conceptual Change in Science Learning: Structuring, Restructuring, or Co-structuring?* Presented at the Annual Meeting of the Jean Piaget Society, Santa Monica, CA.
- Wiser, M. (1996, April). *The Development of Spontaneous Models, Synthetic Models, and Expert Models in Ninth-graders as they Learn Thermal Physics with On-line Computer Modeling*. Presented at the Annual Meeting of the American Educational Research Association, NY.
- Wiser, M. (1996, June). Facilitating students; construction of appropriate mental models in the domain of thermal physics. Presented at the 26th Annual Symposium of the Jean Piaget Society, Philadelphia.
- Higgins, T., & Wiser, M. (1996, June). Conceptual change and the problem of language. Presented at the 26th Annual Symposium of Jean Piaget Society, Philadelphia, PA.
- Wiser, M. & Snir, J. (1995, August). *On-line modeling of thermal phenomena fosters conceptual reorganization and new mental models in high school students*. Poster presented at the Biannual Meeting of the European Association for Research in Learning and Instruction. Nijmegen, The Netherlands.
- Wiser, M. (1995, April). *Seeing it as it Happens: Linking Thermal Processes to Conceptual and Molecular Computer Models in Real Time*. Paper presented at American Educational Research Association (AERA), San Francisco, CA
- Wiser, M., O'Connor, K., & Higgins, T. (1995, April). *Mutual Constraints in the Development of the Concepts of Matter and Molecule*. Paper presented at American Educational Research Association (AERA), San Francisco, CA.
- Wiser, M. (1994). *Interactions Between Mental Models and Teaching Models Can Lead to Conceptual Change: Heat, Temperature, and the Molecular Structure of Matter*. Paper presented at American Educational Research Association, (AERA), New Orleans.
- Wiser, M. (1993). *Naive Theory, Conceptual Models, and Mental Models in Thermal Physics*. Paper presented at SRCD, New Orleans, LA

- Wiser, M. (1993). Students' conception about the relation of molecules and matter. Paper presented as part of a symposium on *Mental Models* at the Annual Meeting of the American Educational Research Association.
- Wiser, M. (1993, February). Paper presented at the Conference *Setting a Research and Planning Agenda for Computer Modeling in the Pre-college Curriculum*, sponsored by the National Science Foundation and co-hosted by Lesley College, Cambridge, MA, and Bolt, Baranek & Newman.
- Wiser, M. (1993, August). *Models as Analogies: How Teaching Models Can Drive Conceptual differentiation*. Paper presented at the 5<sup>th</sup> European Conference of the European Association for Research on Learning and Instruction. Aix-en-Provence, France.
- Wiser, M. (1992). Interactions between mental and computer models: A microgenetic view of the differentiation between heat and temperature. Paper presented as part of symposium *Theoretical and instructional implications of various perspectives on students conceptions in science* at American Educational Research Association, San Francisco, CA.
- Wiser, M. (1992). *Looking for Positive Interactions between Computer Mental Models in Thermal Physics Instruction*. Invited presentation at NATO Advanced Study Institute on Psychological and Educational Foundations of Technology-Based Learning Environments, Kolymbari, Crete.
- Wiser, M. (1992). *Models of the Learner and Learning with Models*. NATO meeting "Psychological and Educational Foundations of Technology-Based Learning Environments," Kolymbari, Crete.
- Wiser, M. (1991). *Conceptual Change and Theory Change in Thermal Physics*. Invited Paper. International Workshop, Research in Physics Learning, University of Bremen, Germany.
- Wiser, M. (1991). *Promoting Conceptual Change with New Technology*. Invited paper. International workshop, Research in Physics Learning: Theoretical Issues and Empirical Studies. Bremen, Germany.
- Wiser, M. (1991, April). Differentiation of Intensive and Extensive Quantities in Physics: Successes and Failures of Microcomputer Based Curricula. Paper presented in a seminar *Two decades of computers in mathematics and science education: Myth and reality*, University of Puerto Rico.
- Wiser, M. (1989). Does learning science involve theory change? As part of a symposium: *The Child as Scientist*. Society for Research in Child Development Biennial Meeting, Kansas City, MO.
- Wiser, M. (1989). *Conceptual Computer Models for Thermal Physics: How High School Students Come to Differentiate between Heat and Temperature*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.
- Wiser, M. (1989). *The Role of Computer Models in Fostering Reconceptualization: The Case of*

*Heat and Temperature*. Paper presented at the Annual Meeting of the American Association for the Advancement of Science, San Francisco, CA.

Kipman, D., & Wiser, M. (1988). *The Role of Computer Models in Fostering Reconceptualization: The Case of Heat and Temperature*. Paper presented at the Educational Technology Center National Conference, Cambridge, MA.

Wiser, M. (1988). Teaching Middle School Science. Paper presented at the *Learning Science and Mathematics: Applications of Research for Effective Instruction*, sponsored by the J. S. McDonnell Foundation, St. Louis, MO.

Wiser, M. (1988, June). *Heat and temperature: The use of computer simulation*. Workshop at the National Science Foundation Conference on *The Revision of Introductory College Science Courses for Teacher Preparation and the Liberal Arts*, Airlie, VA.

Wiser, M. (1988). The differentiation of heat and temperature: An evaluation of the effect of microcomputer models on students' misconceptions. Invited participant at the American Educational Research Association Convention symposium on *Cognitive Structure and Conceptual Change*. New Orleans, LA.

Wiser, M. (1988). The differentiation of heat and temperature: An evaluation of the effect of microcomputer models on students' misconceptions. Paper presented as part of a symposium on *Cognitive Structure and Conceptual Change* at American Educational Research Association, New Orleans, LA.

Wiser, M. (1987). *The Uses of MBL, Laboratory Simulation and Kinetic Molecular Models to Teach Thermal Physics*. Paper presented at AERA, Washington, DC.

Wiser, M. (1987). *The Uses of MBL, Laboratory Simulation and Kinetic Molecular Models to Teach Thermal Physics*. AERA Annual Meeting, Washington, DC.

Wiser, M. (1986). *Misconceptions about heat and temperature: Educational implications*. University of Tel Aviv, Israel.

Wiser, M. (1986). *Learning about Heat and Temperature: A Content-based Historically Inspired Approach to a Novice-expert Shift*. Paper presented at a conference sponsored by NSF, "The psychology of physics problem solving: Theory and practice," Bank Street College, NY.

Wiser, M. (1986). Using microcomputer-based labs to induce students' differentiation of heat and temperature. AERA Annual Meeting, San Francisco, CA, as part of the symposium *The Impact of Microcomputer-Based Science Labs*.

Wiser, M. (1985). Theory change in the novice-expert shift and in the history of science: The case of heat and temperature. Invited speaker at the Boston Colloquium for the Philosophy of Science, *History of Science as a Laboratory for Cognitive Studies*. Boston, MA.

Wiser, M. (1985). Learning about heat and temperature via MBL. *Microcomputer-Based Laboratory Project Symposium*, Tufts University, Medford, MA.

- Wiser, M. (1985). Theory change in the novice-expert shift and in the history of science: The case of heat and temperature. Invited speaker at the Boston Colloquium for the Philosophy of Science, *History of Science as a Laboratory for Cognitive Studies*. Boston, MA.
- Wiser, M. (1984, October). A comparison between conceptual development in individuals and in the history of science: The case of heat and temperature. Invited participant at the *Workshop on Ontogeny and Phylogeny*, Tel Aviv University, Tel Aviv, Israel.
- Wiser, M. (1984). *The Constraints on Conceptualization of a New Physical Domain: A Comparison of Thermal Concepts in 17th Century Scientists and Modern Novices in Physics*. Invited paper at the Conference Constraints on Cognitive Development, held at the University of Pennsylvania, Philadelphia, PA.
- Wiser, M. (1981). *The Role of Intrinsic Axes in Shape Recognition*. Paper presented at the Third Conference of the Cognitive Science Society, Berkeley, CA.
- Smith, C. & Wiser, M. (1981). Conceptual Differentiation: Case Studies in Children and Scientists. Report presented at the meeting of directors of projects supported under the NSF-NIE Cognitive Research Program, Washington, DC.
- Wiser, M. (1981). *The Role of Intrinsic Axes in Shape Recognition*. Paper presented at the Third Conference of the Cognitive Science Society, Berkeley, CA.
- Wiser, M. (1978). *Shapes with Intrinsic Axes: Processing, Memory Representation and Hemispheric Lateralization*. Paper presented at the Eastern Psychological Association Meetings, Washington, DC.

## **WORKSHOP & SYMPOSIA ORGANIZED**

- Wiser, M. & LeCorre, M. (2007). The role of symbolic systems in the development of the number concept. Symposium. Annual Meeting of the Jean Piaget Society. Amsterdam, the Netherlands. May 31-June 2.
- Wiser, M. (2004). "Cognitive Constructivism in Socio-Cultural Learning." International Society for Study of Behavioral Development. July 12-15. Ghent. Belgium
- Wiser, M. (1999). Symposium "Conceptual change in Diverse Domains: Commonalities and Differences." Biennial meeting of the Society for Research in Child Development, April 18, Albuquerque, NM.
- Wiser (1998). Symposium "When Teaching Leads to Conceptual Change," Annual Meeting of the American Educational Research Association (AERA), San Diego, April.
- Wiser, M. (1993). Symposium "More on heat and temperature: Recent advances in our understanding of conceptual change in the domain of physics" Biannual Meeting of the Society for Research in Child Development, New Orleans, LA

## **SOFTWARE DEVELOPMENT**

Wiser, M., & Spodaryk, S. (1995). ULI based Interactive software for teaching basic thermal physics.

Kipman, D., & Wiser, M. (1988). Conceptual models for teaching basic thermal physics. Educational Technology Center. Software SW88-8.

## **CURRICULUM DEVELOPMENT**

Wiser, M. (1988). Prototype of a ninth grade curriculum about heat and temperature.

## **CONSULTING**

The Inquiry project. Project. Proposal No: 0628245  
Source of Support: NSF-IMD (Instructional Materials Design)  
Total Award Amount: \$2,958,769  
Total Award Period Covered: 10/1/2006-03/31/2010  
Location of Project: Tufts University/TERC  
PIs: Sue Doubler & David Carraher (TERC) Roger Tobin (Tufts)

Implications of research on children's learning for assessment: Matter and atomic molecular theory. Paper commissioned by the National Research Council's Committee on K-12 Test Design for Science Achievement. Funding for the Committee was provided by the National Science Foundation.

Consultant for a series of television programs on Science Education for PBS, 1994-1995.

Member of the Advisory Board for the Private Universe - a new PBS series about Science Teaching and Science learning developed by the Harvard-Smithsonian Center for Astrophysics, 1994-95.

Invited to a Planning Meeting at the National Science Foundation (October 25, 1993) to draft the intellectual agenda for a joint initiative of the Human Cognition and Perception Program of the Directorate for Social, Behavioral, and Economic Sciences and the Research in Teaching and Learning Program of the Directorate for Education and Human Resources.

Consultant for Department of Education, Commonwealth of Massachusetts, 1988.

## **REVIEWS**

Cognitive Science Society

Journal of the Learning Sciences

Cognitive Development

National Science Foundation

Research and Evaluation on Education in Science and Engineering (REESE) program.  
Proposals review. March 2007.

Science of Learning Centers. Reviewed proposals for new initiative of Learning Science  
Centers. November 2003.

The Research in Teaching and Learning Program of the Directorate for Education and Human  
Resources, 1994.

Cognition & Instruction

West Publishing