**CURRICULUM VITAE**

# JANICE D. GOBERT, Ph.D.

**Senior Research Scientist**
**Concord Consortium**
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**North American Editor**
**International Journal of Science Education**
**Taylor & Francis Group**
**www.tandf.co.uk/journals**

## EDUCATION

**Doctor of Philosophy** (May, 1994)
**Dissertation**: Expertise in the comprehension of architectural plans: Contributions of representation and domain knowledge.
**Specialization**: Cognitive Science **Supervisor**: Dr. Carl Bereiter
Department of Applied Psychology (OISE)
University of Toronto, Toronto, Ontario

**Master of Arts** (November, 1989)
**Thesis**: The Interpretation of Architectural Plans by Expert and Sub-expert Architects
**Specialization**: Cognitive Science **Supervisor**: Dr. Carl Frederiksen
Department of Educational Psychology and Counselling
McGill University, Montreal, Quebec

**Bachelor of Arts** (Honour's; June, 1985)
Thesis: A Multidimensional Approach to Human Laterality and Perceptual Style
Psychology (major); English Literature (minor)
Laurentian University, Sudbury, Ontario

**Clinical Internship** (September 1988 - May 1989) under supervision of Dr. Pascal Delli Colli, Senior Psychologist, Commission of Catholic Schools of Montreal, Montreal, Quebec

## GRANTS AND ACADEMIC AWARDS

**Inquiring with Geoscience Data Sets (DIGS),** Edys Quelmalz, Principal Investigator, Dan Zalles, Janice Gobert, Co-Principal Investigators; to be awarded July, 2005 from the National Science Foundation, ~$299,000.

**Calipers: Multi-Level Assessments of Science with Technology,** Edys Quelmalz, Principal Investigator, Angela DeBarger, Patty Kreikemeier, Geneva Haertal, Co-Principal Investigators; Janice Gobert, Principal Investigator for sub-contract to Concord Consortium; Awarded February, 2005 from the National Science Foundation; $ 496,025.

**Technology-Enhanced Learning in Science (TELS; www.TELScenter.org),** Marcia Linn, Principal Investigator; Jim Slotta, Bob Tinker, Paul Horwitz, Co Principal Investigators; Janice Gobert, Internship Director; Awarded October, 2003 from the National Science Foundation; $10,000,000.

## GRANTS AND ACADEMIC AWARDS (CONTINUED)

**Making Thinking Visible- Supplement (mtv.concord.org),** J. Gobert, Principal Investigator**,** National Science Foundation; Awarded January, 2002; $50,000.

**Modeling Across the Curriculum (MAC; mac.concord.org),** Paul Horwitz, Principal Investigator; J. Gobert (Research Director & Co-Principal Investigator); C. Dede, R. Tinker, U. Wilensky, Co-Principal Investigators. Intra-Agency Education Research Initiative Grant funded by the National Science Foundation and U.S. Dept. of Education; Awarded September, 2001; $7,100,000.

**The Role of Students' Epistemologies in Learning with Models,** J. Gobert, Principal Investigator; C. Schwarz, Co-Principal Investigator. Center for Innovative Learning Technologies Seed Grant; Awarded December, 2000; $15,000.

**Fostering Transfer from Open-Ended Exploration to Scientific Reasoning**, Paul Horwitz, Principal Investigator; J. Gobert, Co-Principal Investigator. National Science Foundation; Awarded September, 2000; $600,000.

**Modeling Across The Curriculum** with P. Horwitz & R. Tinker. Intra-Agency Education Research Initiative Planning Grant; Awarded August, 2000; $100,000.

**Making Thinking Visible: Promoting Students' Model-Building And Collaborative Discourse In WISE.** J. Gobert, Principal Investigator. National Science Foundation; Awarded January, 2000; $264,000.

**Technical and Theoretical Foundations of Learning Activities with Modeling.** Center for Innovative Learning Technologies Seed Grant; Awarded June, 1999 with **Clayton Lewis,** Principal Investigator**;** Allen Cypher, Andrea diSessa, Vanessa Colella, William Conrad, Jennifer Discenna, Carlos Garcia, Janice Gobert, Ken Hay, Linda Hahner, Pamela Jennings, Raul Zaritsky.

**Investigating Students' Models and Model-Based Reasoning in Plate Tectonics.** J. Gobert, Principal Investigator. National Science Foundation; Awarded June, 1998; $150,000.

**Research Development Award, Western Michigan University.** Awarded August, 1997.

**Dean's Appreciation Award,** Awarded December, 1996; $1,000.

**Spencer Post-Doctoral Fellowship, National Academy of Education**
Awarded Spring, 1995; total award-$40,000.

**Ontario Graduate Scholarship**
May 1991 - May 1992; total award- $11,300.

**University of Toronto Entrance Scholarship**
September 1989 - May 1991; total award- $17,500.

## PROFESSIONAL AFFILIATIONS

Member, American Educational Research Association
Member, Cognitive Science Society
Member, National Association for Research in Science Teaching
Member, International Society for the Learning Sciences

## KEYNOTES, EDITORIALSHIPS & BOOKS, ETC.

North American Editor for the International Journal of Science Education, Taylor & Francis, Limited (http://www.tandf.co.uk/journals/tf/09500693.html)

Gobert, J. & Buckley, B. (in prep.). Science Learning with Model-based Interactive Technologies: Research, Implementation, Equity, & Scalability. Edited volume to be published by Kluwer Academic Publishers, Dordrecht, The Netherlands.

Gobert, J. (2004). What's on your plate? Exemplary science unit highlighted in *Essential Science for Teachers: Earth and Space Science*, by Harvard-Smithsonian Center for Astrophysics, Science Media Group, Annenberg/CPB Project.

Gobert, J. (2004). *Using technology to support students' collaborative on-line learning of Plate Tectonics: Content gains, epistemological gains, and implications for scientific literacy*. Keynote address for the Joint Geosciences Assembly, May 2004, Taipei Taiwan.

Gobert, J. (2005). *Making Thinking Visible: The role of visualization in promoting scientific literacy.* Keynote address for Resurrecting Leonardo- Reconnecting Art and Science for Education. University of Massachusetts- Amherst, February 2, 2005.

Steering Committee for Workshop, "On the Cutting Edge: Professional Development for Geoscience Faculty". Science Education Resource Center, Carleton College, Northfield, MN, May 12-14, 2005.

Reviewer, *Journal of Science Education and Technology*

Guest reviewer, *American Education Research Journal.*

Reviewer, National Science Foundation
Reviewer, Israel Science Foundation

## PUBLICATIONS

Gobert, J. (in press). Leveraging technology and cognitive theory on visualization to promote students' science learning and literacy. To appear in *Visualization in Science Education*, J. Gilbert (Ed.), Springer-Verlag Publishers, Dordrecht, The Netherlands.

Gobert, J. (accepted). The effects of different learning tasks on conceptual understanding in science: teasing out representational modality of diagramming versus explaining. *Journal of Geoscience Education.*

Gobert, J. (submitted). Fostering collaborative model-building and peer critique on-line: Content gains, epistemological gains, and implications for scientific literacy. *Journal of the Learning Sciences.*

Buckley, B.C., Gobert, J.D., Kindfield, A., Horwitz, P., Tinker, R., Gerlits, B., Wilensky, U., Dede, C., & Willett, J. (2004). Model-based Teaching and Learning with BioLogica™: What do they learn? How do they learn? How do we know? *Journal of Science Education and Technology*. *Vol 13(1),* 23-41. (invited paper).

Gobert, J.D., Pallant, A., (2004). Fostering students' epistemologies of models via authentic model-based tasks. *Journal of Science Education and Technology*. *Vol 13(1),* 7-22. (invited paper).

**PUBLICATIONS (Continued)**


Gobert, J.D., & R. Tinker (2004). Introduction to the Issue. *Journal of Science Education and Technology*. *Vol 13(1),* 1-6. (invited paper).

Gobert, J., Horwitz, P., Tinker, B., Buckley, B., Wilensky, U., Levy, S., and Dede, C. (2003). Modeling Across the Curriculum: Scaling up Modeling Using Technology. In the *Proceedings of the Twenty-fifth Annual Meeting of the Cognitive Science Society*, July 31-August 2, Boston, MA.

Gobert, J. (2003). Collaborative Model-Building and Peer Critique Online. In the *Proceedings of the Twenty-fifth Annual Meeting of the Cognitive Science Society*, July 31-August 2, Boston, MA.

Gilbert, J.K., Treagust, D., & Gobert, J. (2003). Science Education: from the past, through the present, to the future. *International Journal of Science Education, 25 (6),* 643-644.

Gobert, J., Slotta, J., & Pallant, A. (2002). Collaborative Model-Building and Peer Critique via the Internet. In P. Bell, R. Stevens, & T. Satwicz (Eds.), *Keeping Learning Complex: The Proceedings of the Fifth International Conference of the Learning Sciences (ICLS)*, pp. 536-537. Mawah: NJ: Erlbaum.

Gobert, J. & Horwitz, P. (2002). Do modeling tools help students learn science? *In @ Concord*, The Concord Consortium Newsletter, 6(1), p.19.

Gobert, J. & Buckley, B. (2000). Special issue editorial: Introduction to model-based teaching and learning. *International Journal of Science Education, 22(9),* 891-894.

Gobert, J. (2000). A typology of models for plate tectonics: Inferential power and barriers to understanding. *International Journal of Science Education, 22(9),* 937-977.

Gobert, J. (1999). Expertise in the comprehension of architectural plans: Contribution of representation and domain knowledge. In *Visual And Spatial Reasoning In Design '99*, John S. Gero and B. Tversky (Eds.), Key Centre of Design Computing and Cognition, University of Sydney, AU.

Gobert, J. & Clement, J. (1999). Effects of student-generated diagrams versus student-generated summaries on conceptual understanding of causal and dynamic knowledge in plate tectonics. *Journal of Research in Science Teaching, 36(1),* 39-53.

Gobert, J. & Discenna, J. (1997). The Relationship between Students' Epistemologies and Model-Based Reasoning. Kalamazoo, MI: Western Michigan University, Department of Science Studies. (ERIC Document Reproduction Service No. ED409164).

Gobert, J. (1997). Summarizing, Explaining, and Diagramming: The Differential Effects on Text-Base Representations and Mental Models. *Proceedings of the Nineteenth Annual Meeting of the Cognitive Science Society.* Stanford University. August 7-10, Palo Alto, CA.

Gobert, J. (1994). Reasoning and inference-making with architectural plans. In N.H. Narayanan (Ed.), *Reasoning with Diagrammatic Representations*. American Association of Artificial Intelligence Technical Report SS-92-02, AAAI Press, Menlo Park, CA.

Gobert, J. (1993). The comprehension of complex graphics: facilitating effects of text on integration and inference-making. *Proceedings of the Fifteenth Annual Meeting of the Cognitive Science Society.* University of Colorado at Boulder, June 18-21. Boulder, CO.

Gobert, J. & Coleman, E.B. (1993). Using diagrammatic representations and causal explanations to investigate children's models of continental drift. *Proceedings of the Society of Research in Child Development.* March 25-28. New Orleans, LA.

Gobert, J. (1992). Reasoning and inference-making with architectural plans. *Working notes of the Spring Symposium on Reasoning with Diagrammatic Representations*. American Association for Artificial Intelligence. Stanford University, March 25-27, 1992. Stanford, CA.

Gobert, J. (1991). The use of textual organizers to enhance the comprehension of graphic information. *Canadian Psychology, 32(2a),* p. 381.

Gobert, J. & Frederiksen, C. (1988). The comprehension of architectural plans by expert and sub-expert architects. *Proceedings of the Tenth Annual Meeting of the Cognitive Science Society.* Montreal, Canada. Hillsdale, NJ.: Lawrence Erlbaum.

**CONFERENCE PRESENTATIONS**

Gobert, J., Buckley, B.C., (April, 2005). *Logging Students' Learning with Hypermodels in BioLogica and Dynamica*. Presented at the Annual Meeting of the American Educational Research Association as part of a symposium, Leveraging on Affordances of Technology-Enhanced Models in Science (J. Gobert, Chair), April 11-15, Montreal, Canada.

Gobert, J. & Horwitz, P. (2005). *Leveraging on Affordances of Technology-Enhanced Models in Science*, Presented at the Annual Meeting of the American Educational Research Association, April 11-15, Montreal, Canada.

Gobert, J. (April, 2005). Discussant on *International Views of Research on Learning about Models and Modeling in Science*. Presented at the National Association for Science Teaching, April 4-7, Dallas, TX.

Gobert, J. (April, 2005). Discussant on *Learning about Models and Modeling in Science: International Views of Research Issues*. Presented at the Annual Meeting of the American Educational Research Association, April 11-15, Montreal, Canada

Gobert, J., Buckley, B., Dede, C., Levy, S., & Slotta, J. (2005). *Technology features that support research through logging of student interactions with models*. Presented at the Winter Text Conference, January 20-23, 2004, Jackson Hole, WY.

Gobert, J., Buckley, B.C., (April, 2004). *Learning with hypermodels: The role of scaffolding and embedded assessment*. Presented as part of an AERA pre-conference workshop, Assessing Student Learning in Technology-Rich Environments organized by Edys Quellmalz, SRI International.

Gobert, J. (April, 2004). *Teaching model-based reasoning with scaffolded interactive representations: cognitive affordances and learning outcomes.* Presented at the National Association for Science Teaching, April 1-4, Vancouver, B.C.

Gobert, J. (February, 2004). *Harnessing technology to support on-line model building and peer collaboration.* Presented at Teaching Geoscience with Visualization Workshop, February, 2004 Northfield, MN.

Gobert, J. (2004). *Collaborative Discourse Around Students' Models within a Web-based Inquiry Science Environment (WISE).* Presented at the Winter Text Conference, January 16-19, Jackson Hole, WY.

**CONFERENCE PRESENTATIONS (continued)**

Gobert, J., Horwitz, P., Tinker, B., Buckley, B., Wilensky, U., Levy, S., and Dede, C. (2003). *Modeling Across the Curriculum: Scaling up Modeling Using Technology*. Presented at the Annual Meeting of the Cognitive Science Society, July 31-August 2, Boston, MA.

Gobert, J. (2003). *Collaborative Model-Building and Peer Critique On-line*. Presented at the Annual Meeting of the Cognitive Science Society, July 31-August 2, Boston, MA.

Gobert, J. (2003). *Students' Collaborative Model-Building and Peer Critique On-line*. Presented at the National Association for Research in Science Teaching, Philadelphia, PA, March 23-26.

Gobert, J., Slotta, J., & Pallant, A. (2002). *Collaborative Model-Building and Peer Critique via the Internet*. Presented at the International Conference of the Learning Sciences, Seattle, WA, October 23-26.

Gobert, J. Slotta, J. & Pallant, A. (2002). *Inquiry Learning Through Students' East-West Coast Collaboration*. Presented at the National Association for Research in Science Teaching, New Orleans, LO, April 7-11.

Gobert, J., Snyder, J., & Houghton, C. (2002). *The influence of students' understanding of models on model-based reasoning.* Presented at the Annual Meeting of the American Educational Research Association, New Orleans, LO, April 1-5.

Gobert, J. Slotta, J. & Pallant, A., Nagy, S. & Targum, E. (2002). *A WISE Inquiry Project for Students' East-West Coast Collaboration*, Presented at the Annual Meeting of the American Educational Research Association, New Orleans, LO, April 1-5.

Gobert, J. & Slotta, J. (2002*). Collaborative Learning Technologies: Representations, Content Learning, & Cultural Context*. Symposium presented at the Annual Meeting of the American Educational Research Association, New Orleans, LO, April 1-5.

Gobert, J. (2002). *Summarizing, Explaining, and Diagramming: The Differential Effects on Reading Times, Text-Base Representations, and Mental Models of Science Text*. Presented at the Winter Text Conference, Jackson Hole, WY, January 25-28.

Slotta, J., Linn, M.C., Gobert, J. & Pallant, A. (2002*). Collaborative Design of WISE Collaborative Inquiry Curriculum: A Case Study*. Presented at Computer Supported Collaborative Learning Conference, Boulder, CO, January, 7-11.

Gobert, J. and Pallant, A. (2001). *Making Thinking Visible: Promoting Science Learning through Modeling and Visualizations*. Presented at the Gordon Research Conference, Mt. Holyoke College, S. Hadley, MA, August 5-10.

Gobert, J. (2001). *The Use of a Web-based Science Inquiry Environment (WISE) for Modeling, Visualization, and On-line Collaboration.* Presented at Image & Meaning, MIT, Cambridge, MA, June 10-13.

Gobert, J. (April, 2001). *Summarizing, Explaining, and Diagramming: The Differential Effects on Reading Times, Text-Base Representations, and Mental Models.* Accepted for presentation at the Annual Meeting of the American Educational Research Association, Seattle, WA., April 10-14. * not presented due to family emergency.

**CONFERENCE PRESENTATIONS (continued)**

Gobert, J. (October, 2000). *Making Thinking Visible: Promoting Students' Model-Building And Collaborative Discourse In W.I.S.E*. Presented at the Center for Innovative Learning Technologies, October 26-19, Tysons Corner, VA.

Staudt, C. & Gobert, J. (January, 2000). *Kids and Palms*. Presented at the Water Quality Summit Meeting. January 13-16, University of Michigan. Ann Arbor, MI.

Gobert, J. (June, 1999). *Expertise in the comprehension of architectural plans: Contribution of representation and domain knowledge*. Presented at the Visual Spatial Reasoning and Design Conference, June 15-17, Massachusetts Institute of Technology. Cambridge, MA.

Gobert, J. (June, 1999). *Investigating students' models and model-based reasoning in plate tectonics.* Presented at the National Science Foundation, REPP Principal Investigators' Meeting, June 3-4, Arlington, VA.

Gobert, J. and Buckley, B. (April, 1998). Co-chair and co-organizer of symposium presented at the Annual Meeting of the American Educational Research Association. *International perspectives on model-based teaching and learning in science*, April 13-18, San Diego, CA.

Gobert, J. (April, 1998). *A typology of models for plate tectonics: Inferential power and barriers to understanding.* Presented at the Annual Meeting of the American Educational Research Association for a symposium entitled, International perspectives on model-based teaching and learning in science, April 13-18, San Diego, CA.

Gobert, J. (August, 1997). *Summarizing, Explaining, and Diagramming: The Differential Effects on Text-Base Representations and Mental Models*. Presented at the Nineteenth Annual Meeting of the Cognitive Science Society. Stanford University, August 7-10. Palo Alto, CA.

Gobert, J. (March, 1997). Chair and organizer of symposium presented at the Annual Meeting of the American Educational Research Association. *Investigating the relationship between students' epistemologies and their learning*, Chicago, IL.

Gobert, J. & Discenna, J. (March, 1997*). The relationship between students' epistemologies and model-based reasoning*. Presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Gobert, J. (January, 1997). *The effects of summarizing, explaining, and diagramming on text-base representations and mental models*. Presented at the Eighth Annual Winter Text Conference, January 18-24, 1997. Jackson Hole, WY.

Gobert, J. (October, 1996). *Drawing to Learn: Fostering children's model-based reasoning through student-generated diagrams.* Presented at the Fall Meeting of the National Academy of Education, October 24-25, Chicago, IL.

Gobert, J. (April, 1995). *Model-based reasoning by fifth graders about plate tectonics*. Presented at the Annual Meeting of the American Educational Research Association, April 18-22. San Francisco, CA.

Gobert, J. (April, 1995). *The use of text to facilitate search and integration processes from complex graphics.* Presented at the Annual Meeting of the American Educational Research Association, April 18-22. San Francisco, CA.

**CONFERENCE PRESENTATIONS (continued)**

Gobert, J. and Hegarty, M. (April, 1995). Chair and co-organizer of symposium presented at the Annual Meeting of the American Educational Research Association. *Constructing mental models from text and graphics: Processes of integration and inference*. April 18-22. San Francisco, CA.

Gobert, J. (January, 1995). *Diagramming versus summarizing during reading: The effects on the propositional and mental model representations*. Presented at the Sixth Annual Winter Text Conference, January 28-February 4, 1995. Jackson Hole, WY.

Gobert, J. (January, 1995). *Text as a processing aid to complex graphics: The effects on mental model representations.* Presented at the Sixth Annual Winter Text Conference, January 28-February 4, 1995. Jackson Hole, WY.

Gobert, J. & Clement, J. (April, 1994). *Promoting causal model construction in science through student-generated diagrams.* Presented at the Annual Meeting of the American Educational Research Association, April 4-8. New Orleans, LA.

Gobert, J. (June, 1993). *The comprehension of complex graphics: Facilitating effects of text on integration and inference-making.* Presented at The Fifteenth Annual Meeting of the Cognitive Science Society. University of Colorado at Boulder, June 18-21. Boulder, CO.

Gobert, J. & Coleman, E.B., Scardamalia, M. & Bereiter, C. (April, 1993). *Fostering the development of children's graphical representation and causal/dynamic models through CSILE.* Presented at the Annual Meeting of the American Educational Research Association, April 12-16. Atlanta, GA.

Gobert, J. & Coleman, E.B. (March, 1993). *Using diagrammatic representations and causal explanations to investigate children's models of continental drift.* Presented at the Biannual Meeting of the Society of Research in Child Development, March 25-28. New Orleans, LA.

Gobert, J. (March, 1992). *Reasoning and inference-making with architectural plans.* Spring Symposium on Reasoning with Diagrammatic Representations. Presented at the American Association for Artificial Intelligence. Stanford University, March 25-27, 1992. Stanford, CA.

Gobert, J. (June, 1991). *The use of text to enhance the understanding of graphic information sources.* Presented at the Canadian Psychological Association, Calgary, Alberta.

Gobert, J. (October, 1991). *Architecture in the year 2000: The challenge of change*. Invited speaker for the annual meeting of the Royal Architectural Institute of Canada, Toronto, Canada.

Gobert, J. & Frederiksen, C. (March, 1989). *Expert and novice semantic interpretation of architectural drawings*. Presented at the Annual Meeting of the American Educational Research Association. San Francisco, CA.

Gobert, J. & Frederiksen, C. (August, 1988). *The comprehension of architectural plans by expert and sub-expert architects.* Presented at the Tenth Annual Meeting of the Cognitive Science Society. Montreal, Canada.

**INVITED COLLOQUIA**

Gobert, J. (May, 2004). *Harnessing Technology to Promote Science Learning and Scientific Literacy*. Presented to the CITE group (Centre for Information Technology in Education), University of Hong Kong.

Gobert, J. (October, 2003). *Harnessing Technology to Promote Model-Based Learning and Scientific Literacy.* Presented at the IKIT Colloquium Series, University of Toronto, Toronto, CA.

Gobert, J. (April, 2003). *Characterizing model-based learning and peer critique within an on-line inquiry-based unit for Plate Tectonics*. Presented to the Hampshire College Cognitive Science Lecture Series, Amherst, MA.

Gobert, J. (December, 1999). *Diagramming for learning science: Implications for model-based reasoning*. Presented to the Department of Social Sciences and the Center for Educational Development, Worcester Polytechnic Institute, Worcester, MA.

Gobert, J. (September, 1999). *Student learning in Plate Tectonics: The role of prior knowledge, instructional strategies, and epistemologies.* Presented to the Department of Education, Tufts University, Medford, MA.

Gobert, J. (October, 1998). *Strategies to Diagnose and Remediate Students' Models in Plate Tectonics*. Presented to the Center for Astrophysics, Harvard University, Cambridge, MA.

Gobert, J. (October, 1998). *Using Student-Generated Diagrams to Investigate Students' Models and Model-Based Reasoning in Plate Tectonics*. Presented to the Center for Earth and Space Science Education, TERC, Cambridge, MA.

Gobert, J. (September, 1997). *Summarizing, Explaining, and Diagramming: The Differential Effects on Text-Base Representations and Mental Models.* Presented at the Science Studies Colloquium Series, Western Michigan University, Kalamazoo, MI.

Gobert, J. (March, 1995). *Knowledge acquisition from complex graphics: Processes of search and integration*. Department of Psychology, Dartmouth College, Hanover, NH.

Gobert, J. (March, 1995). *The use of think aloud protocols to trace knowledge acquisition and integration processes from complex graphics*. Department of Psychology, Cognitive Division, University of Massachusetts, Amherst, MA.

Gobert, J. (October, 1994). *Children's understanding of causality: The effects of student-generated diagrams and visual analogies on conceptual knowledge.* Department of Psychology, Developmental Division, University of Massachusetts, Amherst, MA.

Gobert, J. (December, 1993). *Facilitating fifth graders' causal model construction through student-generated diagrams and visual analogies.* Learning Research Development Center, University of Pittsburgh, Pittsburgh, PA.

Gobert, J. (November, 1993). *Promoting causal model construction of continental drift with fifth graders.* Bolt, Beranek, and Newman, Cambridge, MA.

Gobert, J. (November, 1993). *The benefit of student-generated diagrams on causal and dynamic model construction: A study of fifth graders' learning of continental drift.* Scientific Reasoning Research Institute Colloquia Series. University of Massachusetts, Amherst, MA.

**INVITED COLLOQUIA (Continued)**

Gobert, J. (September, 1991). *Why a plan is worth at least 1,000 words: Determining novices' interpretations, representations, and mental models of architectural plans.* Invited Colloquium, Psychology Department, Carnegie-Mellon University, Pittsburgh, PA.

Gobert, J. (September, 1991). *The use of cognitive methodologies to determine the types of knowledge represented in architectural plans and their potential usefulness in the development of CAD software.* Design Lecture Series, Engineering Design Research Center, Carnegie-Mellon University, Pittsburgh, PA.

Gobert, J. (September, 1991). *The contribution of spatial abilities to real time tasks in the domain of architecture.* Invited Colloquium, Educational Testing Service, Princeton University, NJ.

**PROFESSIONAL EXPERIENCE**

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|---|---|
| Adjunct Associate Professor<br>August 2005-<br>October, 2005 | Social Sciences and Policy Studies Department<br>Worcester Polytechnic Institute<br>Chair: Dr. Khalid Saaed |
| Senior Research Scientist<br>January 2000-<br>present | The Concord Consortium<br>President: Dr. Robert Tinker |
| Part-time Faculty<br>January 2000-<br>December 2000 | Education Department<br>Tufts University<br>Chair: Dr. Analucia Schliemann |
| Research Associate<br>May 1999-<br>December 2002 | Department of Learning and Teaching<br>Harvard University<br>Sponsor: Dr. Robert Kegan |
| Visiting Scholar<br>July 1998-<br>May 1999 | Department of Learning and Teaching<br>Harvard University<br>Sponsor: Dr. Judah Schwartz |
| Assistant Professor<br>January 1996 -<br>April 2000 | Department of Science Studies<br>Western Michigan University<br>Chair: Dr. Larry Oppliger |
| Post-Doctoral Research Associate<br>May 1994 -<br>December 1995 | Scientific Research Reasoning Institute<br>University of Massachusetts, Amherst<br>Project Director: Dr. John Clement |
| Research Associate<br>September 1992 -<br>May 1994 | Scientific Research Reasoning Institute<br>University of Massachusetts, Amherst<br>Project Director: Dr. John Clement |
| Research Assistant<br>September 1989 -<br>April 1992 | Centre for Applied Cognitive Science<br>University of Toronto<br>Project Head: Dr. C. Bereiter & M. Scardamalia |

**PROFESSIONAL EXPERIENCE (CONTINUED)**

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|---|---|
| Research Assistant<br>January 1986 -<br>May 1989 | Lab. of Applied Cognitive Science<br>McGill University<br>Project Head: Dr. C. Frederiksen |
| Research Assistant<br>September 1985 -<br>December 1985 | McGill Giftedness Centre<br>McGill University<br>Project Head: Dr. B. Shore |
| Statistics Consultant<br>October 1988 -<br>March 1989 | Reading Centre<br>McGill University<br>Director: Dr. M. Maguire |
| Statistics Consultant<br>Sept. 1987 - Dec. 1987<br>Feb. 1987 - Apr. 1987 | Centre for Ethnographic Studies<br>McGill University<br>Project Head: Dr. T. Eisemon |
| Teaching Assistant<br>January 1988 - April 1988<br>Sept. 1987 - Dec. 1987 | Course: Educational Media<br>McGill University<br>Professors: Dr. R. Boulianne/ B. Wilson |
| Teaching Assistant<br>September 1984 -<br>April 1985 | Course: Introductory Psychology<br>Laurentian University<br>Professor: Dr. E. Levin |

**COURSE DEVELOPMENT & TEACHING AT TUFTS EDUCATION DEPT.**

***Development of Knowledge and Reasoning in the Science Curriculum*** **(ED 111/112)--** This course covers multiple perspectives on the development of scientific knowledge and reasoning through readings from science education research. Students enrolled in the course are required to conduct a review of the literature in their respective content area and develop either a curriculum plan for a unit (motivated by their literature review) or conduct and analyze a series of clinical interviews with middle or high school students.

***Educational Research Methods*** **(ED 271)--** This course covers research methods used in education and psychology including both qualitative and quantitative research. Students are required to develop a research proposal (suitable at the Masters level): this includes a review of the literature, rationalizing and concretizing the research problem, collecting and analyzing pilot data, and writing up a publication-style report with a section to include how this research project would be expanded into a larger scale research project.

## COURSE DEVELOPMENT & TEACHING AT WESTERN MICHIGAN UNIVERSITY- DEPT. OF SCIENCE STUDIES

***Models of Learning and Teaching*** **(SCI 616)**-- This course covers theoretical models of learning, starting with the philosophical influences of Plato and Aristotle, and progressing through Behavioristic models (and their downfall), Constructivist views, including Piaget and Vygotsky, and contemporary approaches, including Situated Cognition, and Information-Processing models of learning.

***Methodological Issues in Research on Cognition*** **(SCI 690)**-- This course is a seminar designed to provide masters and doctoral students with essential research design knowledge and methodological skills necessary to carry out research on learning in complex domains such as science and mathematics.

***Cognitive Science: Foundations and Theoretical Issues*** **(SCI 621/PSYC 697)**-- This course is cross-listed with the psychology department and serves as a cognitive course requirement for the graduate students in the psychology program. It also serves as a Cognate course in the Philosophy, Computer Science, and Religion Departments. The first part of the course covers a broad range of cognitive science issues, including its central issues, its philosophical and psychological foundations, and experimental methods employed, including computational approaches. The second part of the course includes specific specialty topics within cognitive science, such as neuroscience, knowledge representation, memory, problem-solving, expertise, language processing, and vision.

***Research on Scientific Reasoning in the Mental Models Tradition*** **(SCI 617)**-- The first half of the course focuses on theoretical issues of mental models, (i.e., defining mental models, the processes by which they are constructed, think aloud tasks and protocol analysis as means to investigate mental models, and a critique of mental models). The second part of the course focuses on the review and critique of current journal papers which utilize the mental models framework in research on scientific reasoning.

## INTERDISCIPLINARY COGNITIVE SCIENCE SEMINAR

In September 1996 I began an inter-departmental faculty seminar on Cognitive Science at Western Michigan University. The members include a total of seventeen faculty from several departments including, Science Studies, Philosophy, Comparative Religion, Computer Science, and Psychology. Our goal here is to discuss seminal papers and issues in Cognitive Science with reference to each member's respective discipline. Since my leave of absence from WMU in April 1998 the seminar has been directed by Dr. E. Thomas Lawson.