Curriculum Vitae
Philip Bell
Assistant Professor of Cognition & Technology

ADDRESS	Cognitive Studies in Education 322 Miller Hall, Box 353600 College of Education University of Washington Seattle, WA 98195	HOME 1541 NE 91st Street Seattle, WA 98115 (206) 729-2789
CONTACTS	office: (206) 221-3642 fax: (206) 543-8439	email: pbell@u.washington.edu homepage: http://faculty.washington.edu/pbell/

EDUCATION

Ph.D., Education in Mathematics, Science, and Technology
from the University of California, Berkeley, 1998.
Dissertation: "Designing for Students' Science Learning Using Argumentation and Classroom Debate."
Committee: Marcia C. Linn (chair), Barbara Y. White, Nancy A. Van House.

M.A., Education in Mathematics, Science, and Technology
from the University of California, Berkeley, 1996.
Thesis: "Debate as an Instructional Form in Science Education."

B.S., Electrical Engineering and Computer Science, University of Colorado at Boulder, 1989.

AREAS OF RESEARCH

Science education, theories of learning and instruction, principled design of learning environments and technologies, children's epistemologies and images of science, university-school partnerships.

RESEARCH GRANT AWARDS

Co-Principal Investigator of the "Science Controversies On-Line: Partnerships in Education (SCOPE)" Project funded by the National Science Foundation through the Knowledge and Distributed Intelligence (KDI) Initiative with Marcia C. Linn (UC-Berkeley) and Pam Hines (*Science* magazine, AAAS), 10/98 – 9/01, $1.84 million. **URL - http://scope.educ.washington.edu/**

Co-Principal Investigator of a grant entitled "A Comparative Psychology of School Subjects: Promoting Epistemological Sophistication in Elementary Science Learning through the Study of History" funded by the National Science Foundation, 4/00 – 3/03, $1 million with Samuel Wineburg, Reed Stevens, and Leslie Herrenkohl. **URL - http://www.nsf.gov/cgi-bin/showaward?award=9980536**

Co-Principal Investigator of the "Partnership for Research in Inquiry-Based Math, Science, and Engineering Education (PRIME)" Project funded by the National Science Foundation through the GK-12 Initiative, 1/00 – 12/02, $1.47 million. Project involves coordinating and studying partnerships between

graduate students in Math, Science, and Engineering and middle school science and math teachers.
URL - http://www.engr.washington.edu/prime/

Principal Researcher on the "Program for Educational Transformation Through Technology (PETTT)" Project at the University of Washington, 9/99 – 8/01, $1.27 million.
URL - http://depts.washington.edu/pettt/

Sponsoring Mentor (along with Prof. Leslie Herrenkohl) for Dr. Kalyn Shea who was awarded a two-year fellowship from the National Science Foundation through the "Postdoctoral Fellowships in Science, Mathematics, and Technology Education" (PFSMETE) program. We are mentoring Dr. Shea on the practice of classroom-based educational research and the development of innovative science curricula.

Participant in the Design-Based Research Collective funded by the Spencer Foundation through an Advanced Studies Institute grant. Other participants included Christopher Hoadley (PI), Eric Baumgartner, Philip Bell, Sean Brophy, Sherry Hsi, Diana Joseph, Chandra Orrill, Sadhana Puntambekar, William Sandoval, and Iris Tabak. Our collective efforts focused on formalizing design-based research as conducted in education.

Principal Investigator of the "Cognitive Benefits of Speech Recognition for Students with Learning Disabilities" Project funded by Microsoft through the "Exploring PC Accessibility: New Discoveries" grant program, 4/1/99 – 3/31/00, $10,000. The project was directed by Tom Quinlan and Scott Beers as part of their graduate study in the College of Education at the University of Washington.

Project Director for the "Fostering University and School Partnerships through KIE User Groups" Project at UC-Berkeley funded by the Department of Commerce, Marcia C. Linn (Principal Investigator), 5/97 – 9/98, $64,000. Project involved coordinating the efforts of a university-school partnership consisting of six middle school teachers, two graduate students from the natural sciences, and one graduate student from education.

Dissertation Research Fellowship from the National Science Foundation through the "Reforming Education Through Science & Design" Traineeship Program; UC-Berkeley; 1997-98; Andy diSessa, Marcia C. Linn & Michael Ranney (Principal Investigators). **URL - http://soe.berkeley.edu/sand.html**

PROFESSIONAL EXPERIENCE

9/98 - present	Assistant Professor, Educational Psychology and Curriculum & Instruction, College of Education, University of Washington.
2/97 – 8/98	Project Director for an educational research project funded by the Department of Commerce through the Interactive University Initiative at the University of California, Berkeley, Prof. Marcia C. Linn (Principal Investigator).

11/94 – 8/98 Research Assistant for the Knowledge Integration Environment (KIE) research project, Prof. Marcia C. Linn (Principal Investigator), Graduate School of Education, University of California, Berkeley. **URL - http://www.kie.berkeley.edu/KIE.html**

8/93 – 8/98 Research Assistant for the Computer as Learning Partner (CLP) research project, Prof. Marcia C. Linn (Principal Investigator), Graduate School of Education, University of California, Berkeley. **URL - http://www.clp.berkeley.edu/CLP.html**

10/90-10/92 Research Associate and Chief Software Engineer for Architectural Energy Corporation (Boulder, Colorado) for the Earth Explorer educational research project funded by the National Science Foundation, SBIR program.

PEER-REVIEWED JOURNAL PUBLICATIONS

Bell, P. (in press). Design studies in education: A case-study relating children's argument construction and science learning. *Unterrichtswissenschaft*.

Bell, P., & Linn, M. C. (2000). Scientific arguments as learning artifacts: Designing for learning from the web with KIE. *International Journal of Science Education, 22*(8), 797-817.

Linn, M. C., Shear, L., Bell, P., & Slotta, J. D. (1999). Organizing principles for science education partnerships: Case studies of students' learning about 'rats in space' and 'deformed frogs'. *Educational Technology Research and Development*, *47*(2), 61-84.

Linn, M. C., Bell, P., & Hsi, S. (1998). Using the internet to enhance student understanding of science: The knowledge integration environment. *Interactive Learning Environments*, 6(1-2), 4-38.

PEER-REVIEWED CONFERENCE PUBLICATIONS

Bell, P. & Davis, E. A. (2000). Designing Mildred: Scaffolding Students' Reflection and Argumentation Using a Cognitive Software Guide. In B. Fishman (Ed.), *Proceedings of ICLS '00: The Fourth International Conference on the Learning Sciences*. Mahwah, NJ: Lawrence Erlbaum Associates.

Bell, P. (1997). Using argument representations to make thinking visible for individuals and groups. In R. Hall, N. Miyake, & N. Enyedy (Eds.), *Proceedings of CSCL '97: The Second International Conference on Computer Support for Collaborative Learning*, (pp. 10-19). Toronto: University of Toronto Press.

Bell, P., Davis, E. A., & Linn, M. C. (1995). The knowledge integration environment: Theory and design. In J. L. Schnase & E. L. Cunnius (Eds.), *Proceedings of Computer Support for Collaborative Learning '95* (pp. 14-21). Mahwah, NJ: Lawrence Erlbaum Associates. [Presented in plenary session.]

BOOK CHAPTERS & OTHER PUBLICATIONS

Bell, P. (in press). Using argument representations to make thinking visible for individuals and groups. In T. Koschmann, R. Hall, & N. Miyake (Eds.), *CSCL II: Carrying Forward the Conversation*. Mahwah, NJ: Lawrence Erlbaum Associates.

Bell, P. & Linn, M. C. (2001). Beliefs about science: How does science instruction contribute? In B. Hofer & P. Pintrich, *Personal epistemology: The psychology of beliefs about knowledge and knowing*. Mahwah, NJ: Lawrence Erlbaum Associates.

Bell, P. & Winn, W. (2000). Distributed cognition, by nature and by design. In D. Jonnassen & S. Land, *Theoretical Foundations of Learning Environments*. Mahwah, NJ: Lawrence Erlbaum Associates.

Hoadley, C. M., & Bell, P. (1996, September). Web for your head: The design of digital resources to enhance lifelong learning. *D-Lib Magazine*. **URL - http://www.dlib.org/dlib/september96/kie/09hoadley.html**

PRESENTATIONS

Bell, P. (2001, April). *Fostering Epistemic Practices That Use Knowledge Representations for Group Argumentation.* Paper presented at the 2001 Annual Meeting of the American Educational Research Association, Seattle, WA. (I organized and chaired the session entitled "Argumentation in the Science Classroom: Supporting and Understanding Students' Epistemic Practices.")

Bell, P. & Davis, E. A. (2001, April). *Design Principles for Scaffolding Students' Reflection and Argumentation in Science.* Paper presented at the 2001 Annual Meeting of the American Educational Research Association, Seattle, WA.

Stevens, R., Herrenkohl, L., Wineburg, S. & Bell, P. (2001, April). *Toward a Comparative Understanding of School Subjects: Possible Relations Between Science and History in Elementary School.* Paper presented at the 2001 Annual Meeting of the American Educational Research Association, Seattle, WA.

Havelock, B. & Bell, P. (2001, April). *Using the Internet to Sustain Professional Development for Science Teachers.* Paper presented at the 2001 Annual Meeting of the American Educational Research Association, Seattle, WA.

Bell, P. (2001, February). *Promoting science learning by scaffolding argumentation and classroom debate.* Presentation made to the Computer and Cognitive Sciences Department at Chukyo University, Toyota, Japan.

Bell, P. (2001, February). *Emerging genres of learning technology.* Presentation made to the Computer and Cognitive Sciences Department at Chukyo University, Toyota, Japan.

Bell, P. & Slotta, J. D. (2001, February). *Technology as Controversy Teaching Partner: Genetically Modified Foods.* Presentation made at the 2001 Annual Meeting of the American Association for the Advancement of Science, San Francisco, CA.

Bell, P. (2000, April). *Refinement of Middle School Students' Understanding of Science Resulting From Argumentation and Debate Instruction.* Paper presented at the 2000 Annual Meeting of the American Educational Research Association, New Orleans, LA.

Bell, P. (2000, April). *Designing Knowledge Representation Tools and Practices to Support Students' Theorizing, Argumentation, and Debate in Science.* Paper presented at the 2000 Annual Meeting of the American Educational Research Association, New Orleans, LA.

Bell, P. (2000, April). *SCOPE Virtual Communities: Supporting Teachers, Learners, and Scientists in Exploring Current Controversies.* Paper presented at the 2000 Annual Meeting of the American Educational Research Association, New Orleans, LA.

Bell, P. (2000, April). *Science Controversies On-Line: Partnerships in Education (SCOPE).* Paper presented at the 2000 National Association for Research in Science Teaching, New Orleans, LA.

Bell, P., Shear, L., Wanner, N. & Baumgartner, E. (1999, May). *Of museums, sustained inquiry, and deformed frogs*. Presentation made at the 1999 Annual Conference of the Center for Innovative Learning Technologies, San Jose, CA.

Bell, P. & Shear, L. (1999, April). *Partnering to Design Innovative Internet Curriculum on a Current Scientific Controversy.* Paper presented at the 1999 Annual Meeting of the American Educational Research Association, Montreal, Canada. (This presentation was part of a symposium I organized and chaired entitled "Organizing Principles for Curriculum Design Partnerships: Connecting Teachers, Scientists, and Researchers for Local Classroom Reform.")

Linn, M. C., Shear, L., Bell, P. & Slotta, J. D. (1999, April). *Organizing principles for science education partnerships: Can 'rats in space' and 'deformed frogs' help students learn*. Paper presented at the 1999 Annual Meeting of the American Educational Research Association, Montreal, Canada.

Bell, P. (1999, March). *Debating about Deformed Frogs: Design Principles for Bringing a Current Scientific Controversy into the Classroom.* Paper presented at the 1999 Annual Meeting of the National Association for Research in Science Teaching, Boston, MA.

Bell, P. & Shear, L. (1999, January). *What do on-line activities about the frog controversy teach students*? Presentation made at the 1999 Annual Meeting of the American Association for the Advancement of Science, Anaheim, CA. (This presentation was part of a symposium organized by myself and Marcia C. Linn entitled "Yuck, Gross!: What can on-line deformed frogs teach about science.")

Bell, P. (1998, June). *Computers as learning partners and classroom debate a context for learning science*. Invited presentation made at the "Education for Thinking: Goals and Methods for the Middle School Years" Workshop, Teacher's College, Columbia University, Prof. Deanna Kuhn (organizer).

Bell, P. (1998, April). *The KIE software and curriculum: Relating debate activities and conceptual change through design experiments.* Paper presented at the 1998 Annual Meeting of the American Educational Research Association, San Diego, CA. (This paper was part of a symposium organized by myself and Sherry Hsi entitled "Using Science and Design Experiments to Understand Innovative Uses of Technology in Classrooms.") **URL - http://www.kie.berkeley.edu/events/aera98.html**

Bell, P. (1998, April). *Engaging students with scientific controversy: Using arguments to make thinking visible.* Paper presented at the 1998 Annual Meeting of the National Association for Research in Science Teaching, San Diego, CA.

Bell, P., Shear, L., Muniz, R., Davis, B. & Gordon, J. (1998, March). *How deformed frogs taught us to create successful internet curriculum together*. Session presented at the San Francisco Unified School District Spring District-Wide Teacher Professtional Development Day.

Linn, M. C., Bell, P., Shear, L., Parks, D. & Davis, B. (1997, September). *How deformed frogs can help students learn science using the web: The KIE-Roosevelt curriculum design partnership.* Invited seminar sponsored by the Interactive University Project at the University of California, Berkeley.

Bell, P., & Linn, M. C. (1997, March). *Scientific arguments as learning artifacts: Designing for learning on the web*. Paper presented at the 1997 Annual Meeting of the American Educational Research Association, Chicago, IL. (This paper was part of a symposium I organized and chaired called "Artifact-Building in Computer Learning Environments: Supporting Students' Scientific Inquiry.")

Bell, P., & Linn, M. C. (1997, March). Using technology to support conceptual change in science: Helping students learn about light using the internet. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Chicago, IL.

Bell, P. (1997, January). *Metaphors, Pitfalls, and Possibilities for Using the Internet in K-12 Education*. Invited session at the "Colloquium on Using the Internet for Instruction and Outreach" sponsored by the Instructional Technology Program and the Interactive University Project at the University of California, Berkeley.

Bell, P. (1996, December). *The KIE to learning science with the internet*. Paper presented at National Science Teachers Association Global Summit on Science Education 1996, San Francisco, CA.

Bell, P. (1996, September). *Learning science using the internet: Metaphors, pitfalls, and possibilities*. Paper presented at KidCom '96 Educational Technology Conference, Berkeley, CA.

Bell, P. (1996, July). *Multimedia representations for science learning: A cautionary tale*. Paper presented in poster session at the Cognitive Science '96 Annual Meeting, San Diego, CA.

Bell, P., & Davis, E. A. (1996, April). *Designing an activity in the knowledge integration environment*. Paper presented in a symposium at the 1996 Annual Meeting of the American Educational Research Association, New York, NY.

Bell, P., Kirkpatrick, D., & Muilenburg, L.. (1996, March). *Computer as learning partner: Lessons learned and current best practices*. Session presented at National Science Teachers Association 1996 National Convention, St. Louis, MI.

Bell, P., & Davis, E. A. (1995, October). *The knowledge integration environment: Engaging middle school students in an exploration of evidence on the net*. Exhibit presented at Computer Support for Collaborative Learning (CSCL '95), Bloomington, IN.

Bell, P. (1995, August). *Middle school students' understanding of light as seen through their exploration of evidence*. Invited presentation at the Semi-Annual Meeting of the American Association of Physics Teachers, Spokane, WA.

Bell, P., & Tien, L. (1995, April). *Networked coaching and integrated learning in science*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, San Francisco, CA.

Bell, P. (1995, April). *How far does light go?: Individual and collaborative sense-making of science-related evidence*. Paper presented in a poster session at the 1995 Annual Meeting of the American Educational Research Association, San Francisco, CA.

TEACHING & PROFESSIONAL DEVELOPMENT EXPERIENCE

Assistant Professor, College of Education, University of Washington (Fall 1998 to present). I have designed and taught the following graduate courses: emerging genres of learning technologies, design-based research methods in education, dilemmas in teaching and learning (for preservice secondary teachers), instructional theories, and immersive and interactive computer environments.

Teaching Assistant, Foothill Middle School (Fall 1993 through Spring 1998) and Roosevelt Middle School (Fall 1997 through Spring 1998). This involved spending approximately four weeks out of each academic semester at these schools teaching innovative lessons in their science classes to about 300 students each year.

Numerous teacher workshops and summer institutes on the integration of computer technology into science instruction (associated with the KIE, WISE, and SCOPE research projects).

PROFESSIONAL ACTIVITIES

COMMITTEES	"Outstanding Paper Award Committee" for the competitive evaluation of papers presented at the National Association for Research in Science Teaching (NARST) annual meetings, Fall 1998 to Fall 2001.
ADVISORY BOARDS	Member of the Interim Board of Directors for the Learning Sciences Society Advisor to the Center for Information Technology in Science (ITS), Texas A&M, ITS is an NSF-funded Center for Teaching and Learning.
CONFERENCES	Chair of the upcoming Fifth International Conference of the Learning Sciences (ICLS), October 2002, Seattle, WA. Program committee for the Fourth Computer Supported Collaborative Learning Conference (CSCL), January 2002, Boulder, CO. Program committee for the Fourth International Conference of the Learning Sciences (ICLS), June 2000, Ann Arbor, MI.
REVIEWER	*The Journal of the Learning Sciences* (on the Review Board) *International Journal of Science Education* (on the Editorial Board) *Cognition & Instruction* *Cognitive Science* *Journal of Research in Science Teaching (JRST)* *Interactive Learning Environments* Spencer Foundation (major grants program) National Association for Research in Science Teaching (NARST) Conference Computer Support for Collaborative Learning Conference International Conference for the Learning Sciences International Conference on Computers in Education
MEMBERSHIPS	National Association for Research in Science Teaching American Educational Research Association Society for Social Studies of Science Cognitive Science Society