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Education

Ph.D., Computer Science, Massachusetts Institute of Technology, 1991 (GPA: 5.0/5.0)

M.S., Computer Science, Massachusetts Institute of Technology, 1985

B.A., Chemistry, Columbia College, 1978 (GPA: 4.0/4.0)

Honors and Awards

President's Teaching Scholar, U. of Colorado, 2006

Sullivan-Carlson Award for Teaching (U. of Colorado, College of Engineering and Applied Science), 2005

Boulder Faculty Assembly Excellence in Teaching Award, 2005

National Science Foundation Young Investigator Award, 1992-1997

Bell Laboratories Ph.D. Scholarship Award, 1983-1988

Valedictorian, Columbia College, 1978

Phi Lambda Upsilon (chemistry honor fraternity), 1978

Phi Beta Kappa, 1977

Doctoral Students Supervised

Julie DiBiase [Ph.D., 1995]

Chris DiGiano [Ph.D., 1996]

Tom Wrensch [Ph. D., 2002]

Leah Buechley

Glenn Blauvelt

Susan Hendrix

Professional Service

Books and Ideas editor, *Journal of the Learning Sciences*

Editorial Board, *International Journal of Computers in Mathematical Learning*

Editorial Board, *Cognition and Instruction*

Editorial Board, *Knowledge-Based Systems*

Book reviews editor, *Journal of Interactive Media in Education* (online journal)

Conference co-chair, *Interaction Design and Children 2005 (IDC 2005)*, Boulder

Doctoral Consortium co-chair, *Computer-Supported Cooperative Learning (CSCL 2002)*, Boulder

Organizing Committee, *15th Annual Conference of the Cognitive Science Society*, June 1993, Boulder

Executive committee, Institute of Cognitive Science, University of Colorado, Boulder (1995-7, 2000-2001)

Graduate committee, University of Colorado Computer Science Dept. (1992-2004)

Chair, undergraduate committee, University of Colorado Computer Science Dept. (2004-)

Professional Organizations

IEEE computer society

Association for Computing Machinery

Mathematical Association of America

Research Support

Principal Investigator

“Enhancing and Assessing Spatial Cognition Through Computational Craftwork”, NSF Award REC0125363, June 2002-December 2005. [Total awarded: \$305K/3 yrs.]

National Science Foundation Young Investigator Award, August 1992-1997. (Award # IRI-9258684.) This is a five-year award for \$25K/yr from NSF; in addition NSF matches up to \$37.5K/yr of corporate support. [Total awarded: \$282K/5 yrs (sum of \$125K in "baseline" funds and \$157K in matching funds).]

"Programmable Applications for Computational Physics". NSF Award #IRI-9210324 [1992-1994]. Amount Awarded: \$90 K/3 yrs

Co-Principal Investigator

Co-Principal Investigator (with M. Gross, U. of Washington), “Computationally-Enhanced Construction Kits: Integrating Tangible and Computational Media for Construction and Design”, NSF Grant EIA-0326054. Jan. 2004-Dec. 2008. [Total awarded: \$1.8M/5 years]

Co-Principal Investigator with G. Fischer, E. Arias, and H. Eden, “Social Creativity and Meta-Design in Learning Communities” NSF Grant REC0106976. Amount \$483K/1 yr (with provisions for renewal of the grant for an additional two years at approximately the same level of funding). Start date: June 1, 2001.

Co-Principal Investigator (with C. Strohecker) in "Scientific Studio" project, funded by Mitsubishi Electric Research Laboratory, Cambridge MA. (Gift funding of \$50K/yr, 1998-2000).

Co-Principal Investigator (with G. Fischer, A. Repenning) East/West Consortium: Next Generation Authoring Tools and Instructional Applications. Joint Proposal with Apple, Houghton Mifflin, PWS, UMass, CMU, and Stanford. (NSF/ARPA Award # CDA 9408607.) \$380 K (July 1994 - Dec. 1995; extended for an additional 1.5 years beginning July 1996)

Co-Principal Investigator (with G. Fischer, A. Repenning). "Learning by Design: Environments to Support Reinventing and Reengineering Education as a Lifelong Process." NSF Award No. REC-961396. \$1.88 million/3 years (Sept. 1995-August 1998)

Co-Principal Investigator (with M. Resnick (MIT), R. Berg (Wellesley), S. Turkle (MIT)). "Beyond Black Boxes: Bringing Transparency and Aesthetics Back to Scientific Instruments." NSF Award #CDA-9616444. \$880,658/3 years (Jan. 1, 1997-Dec. 31, 1999).

Co-Principal Investigator (with Gerhard Fischer, CU Boulder). "Mastering High-Functionality Systems by Supporting Learning on Demand" NSF Award #MDR-9253425 (3-year grant, 1992-'994). Amount awarded: \$1,068,097/3 yrs.

Co-Principal Investigator (with G. Fischer) "Designing Useful and Usable Computational Environments", ARPA (Advanced Research Program Agency) 8/94-797 (\$900K/3 years).

Contributing Investigator

Contributing Investigator (Principal Investigators: C. Lewis, N. Songer) on "Enhancing Children's Scientific Explanations Through Collaborative Creation of Animated Qualitative Models" NSF award #RED-9453091: \$1,060,342/3 yrs.

Patents [co-holder]

4,792,145 (1988) *Electronic Stethoscope*

A microprocessor-based sound enhancement system that translates usually inaudible frequencies into the auditory range of the human ear.

4,862,897 (1989) *Electrocardiogram Enhancement*

A system enabling small-amplitude, high-frequency notches associated with myocardial disease and arrhythmias to be recorded by conventional chart recorders.

Work Experience

1/92---present

Assistant Professor of Computer Science, University of Colorado, Boulder. (Promoted to Associate Professor, May 1998.) Current research interests: educational computing, mathematics and science education, integration of computational media and crafts, home and amateur scientific experimentation, development of spatial cognition, scientific computation, the design of learnable programming languages, and human-computer interfaces.

2/89---12/91

Consultant, Bolt Beranek and Newman, Inc., Cambridge, MA. Developed programs to illustrate fundamental concepts of dynamical systems and fractal geometry at the high school level. Also developed "Edison," a language for modelling parallel processes characterized by small numbers of complex entities.

9/82---6/91

Doctoral candidate in computer science, Massachusetts Institute of Technology. Developed "The Kineticist's Workbench," a program to assist chemists in simulating, analyzing, and simplifying complex chemical reaction mechanisms. Other projects included the design of a new, graphic interface for the Scheme programming language; participation in the development of the Boxer language; and the creation of programs for science education.

1/83---8/91

Teaching assistant (1983) and recitation instructor (1985) for the introductory computer science course at MIT. Taught numerous two-week versions of the course at DEC, HP, and MIT. Teaching assistant (1986) for the introductory signals and systems course at MIT.

9/85---1/89

Volunteer teacher, Hennigan School, Boston. Taught Logo to third graders in association with MIT's Project Headlight.

1/82---8/82

Programmer, Children's Television Workshop, New York. Wrote the video game "Taxi" for Radio Shack's Color Computer line.

4/79---12/81

Programmer, Rockefeller University, New York. Worked as a research assistant in the experimental psychology laboratory of Dr. Neal Miller.

9/81---7/82

Teacher, computer programming, Children's Computer School, New York.

1/78---3/79

Chemist, PCK Technologies, Long Island. Did research in electroless copper plating baths and helped develop a fast room-temperature bath which was used in production.

9/77---12/77

Teacher, Columbia University. Instructor for Chemistry 1411x.

Ph. D. committees (for students of advisors besides myself)**1992:**

Scott Henninger (Advisor: Fischer)

Curt Stevens (Fischer)

1993:

Bernard Bernstein (Smolensky)

Mohamed El-Said (Fischer)

Kumiyo Nakakoji (Fischer)

Frank Shipman (Fischer)

Gerry Stahl (Fischer)

1994:

James Sullivan (Fischer)

Nick Wilde (Lewis)

1995:

Tammy Sumner (Fischer)

1996:

Judy Gurka (Citrin)

Jonathan Ostwald (Fischer)

1997:

Casey Boyd (Lewis)

1998:

David Rettinger (Kintsch, Psychology)

Reinhard Stolle (Bradley)

Eric Blough (Lewis)

1999:

Marilyn Blackmon (Polson, Psychology)

2000:

Cyndi Rader (Lewis)

Vanessa Robins (Bradley)

Bill Myers (Lewis)

Missy Schreiner (Kintsch, Psychology)

2002:

Eric Scharff (Fischer)

2003:

Andri Ioannidou (Repenning)

San Skulrattanakulchai (Gabow)

2005:

Kristin Lamberty (Kolodner, Georgia Tech)

Jason Elliott (Bruckman, Georgia Tech)

TheaterPlaywright, *Only the Facts*, Colorado Dramatists reading series, Boulder, CO (May 1998)Playwright, *Palamedes*, Colorado Dramatists reading series, Boulder, CO (Feb. 1994)Playwright, *Hackers*, Manhattan Punch Line Theatre, New York (1984); published, Samuel French (1986).Songwriter, *All of the Above*, Perry Street Theater, New York, 1982.Book, lyrics, and music, *At War with Artificial Men*, Ferris Booth Hall, Columbia College, New York, 1980.

ASCAP songwriting awards, 1978, 80, 82, 83.

Programming Languages

Professional experience: Scheme, Lisp, Pascal, PL/M, Logo, Basic; 6809, 6502, 6800, PDP-8 assembly codes. Familiarity: Java, FORTRAN IV, Python, Prolog

Outside Interests

Word and mathematical puzzles (construction and solution); playwriting; songwriting.

Publications

Books

Eisenberg, M. [1988]
Programming in Scheme
MIT Press, Cambridge, Massachusetts, 1990, and
Scientific Press, Redwood City, California, 1988.

Journal Publications

- Hendrix, S. and Eisenberg, M. [2006]
“Computer-Assisted Pop-Up Design for Children: Computationally-Enriched Paper Engineering”
International Journal on Advanced Technology for Learning, 3:2, 119-127.
(An extended version of a shorter paper in *Proceedings of Eighth IASTED International Conference on Computers and Advanced Technology in Education (CATE 2005)*, Oranjestad, Aruba, pp. 47-52.)
- Shneiderman, B.; Fischer, G.; Czerwinski, M.; Resnick, M.; Myers, B.; Candy, L.; Edmonds, E.; Eisenberg, M.; Giaccardi, E.; Hewett, T.; Jennings, P.; Kules, B.; Nakakoji, K.; Nunamaker, J.; Pausch, R.; Selker, T.; Sylvan, E.; and Terry, M. [2006]
“Creativity Support Tools: Report from a U.S. National Science Foundation Sponsored Workshop”
International Journal of Human-Computer Interaction 20(2), pp. 61-77.
- Eisenberg, M. [2005]
“Technology and the Future of Educational Crafts”
Educational Technology (invited paper), 45(3): 3-11.
- Elumeze, N. and Eisenberg, M. [2005]
“SmartTiles: Designing Interactive 'Room-Sized' Artifacts for Educational Computing”
Children, Youth and Environments (Available at website: www.colorado.edu/journals/cye/) 15(1): 54-66.
- Eisenberg, M. [2005]
“The Material Side of Educational Technology”
Communications of the ACM, 48(1): 51-54
- Eisenberg, M. [2003]
“Mindstuff: Educational Technology Beyond the Computer”
Convergence, 9:2 (Summer 2003), pp. 29-53
- Eisenberg, M. [2002]
“Output Devices, Computation, and the Future of Mathematical Crafts”
International Journal of Computers for Mathematical Learning, 7(1): 1-44
- Resnick, M.; Berg, R.; and Eisenberg, M. [2000]
“Beyond Black Boxes: Bringing Transparency and Aesthetics Back to Scientific Investigation”
Journal of the Learning Sciences, 9(1):7-30.
- Eisenberg, M. [2000]
“Superposed Turtle Walks”
International Journal of Computers for Mathematical Learning, 5(1):65-83
- Blauvelt, G.; Wrensch, T.; and Eisenberg, M. [2000]
“Integrating Craft Materials and Computation”
Knowledge-Based Systems, 13(7-8): 471-478
(Expanded version of a paper that originally appeared in *Proceedings of Creativity and Cognition 3*, Loughborough UK, Oct. 1999)
- Eisenberg, M. and Eisenberg, Ann N. [1998]
“Shop Class for the Next Millennium: Education through Computer-Enriched Handicrafts”

Journal of Interactive Media in Education (<http://www-jime.open.ac.uk/>), Oct. 98

Eisenberg, M. and Nishioka, A. [1997]
"Orihedra: Mathematical Sculptures in Paper."
International Journal of Computers for Mathematical Learning., 1:225-261.

Eisenberg, M. and Nishioka, A. [1997]
"Creating Polyhedral Models by Computer"
Journal of Computers in Mathematics and Science Teaching. 16(4):477-511

Eden, Hal; Eisenberg, Michael; Fischer, Gerhard; and Repenning, Alexander [1996]
"Making Learning a Part of Life. "
Communications of the ACM, 39:4, pp. 40-42.

Eisenberg, M. [1995]
"Embedding Languages within Design Environments."
Knowledge-Based Systems, 8:2-3, pp. 135-142.

Eisenberg, M. [1995]
"Programmable Applications: Exploring the Potential for Language/Interface Symbiosis."
Behaviour and Information Technology, 14:1, pp. 56-66.

Eisenberg, M. [1994]
"Programmable Applications for the Arts: Computational Tools for Hand, Eye, and Mind."
Knowledge-Based Systems, 7:4, pp. 239-246. (An earlier version of this paper appeared in the Proceedings of *The International Symposium on Creativity and Cognition*, Loughborough, England April 1993.)

Horwitz, P. and Eisenberg, M. [1992]
"MultiMap: an Interactive Tool for Mathematical Experimentation."
Interactive Learning Environments, 2:3-4 (1992), pp. 141-179.
(An earlier version of this paper was published as Bolt Beranek and Newman Memo 7651, September, 1991.)

Eisenberg, M. [1991]
"The Kineticist's Workbench: Qualitative/Quantitative Simulation of Chemical Reaction Mechanisms"
Expert Systems with Applications, 3:3 (1991), pp. 367-377.

Chasman, D.; Silbey, R.; and Eisenberg, M. [1991]
"Massively Parallel High-Energy Time-Dependent Wave-Packet Calculations."
Theoretica Chimica Acta, 79:175-182 (1991).

Chasman, D.; Silbey, R.; and Eisenberg, M. [1990]
"Massively Parallel Time Dependent Wave-Packet Calculations in a Classically Chaotic Potential."
Chemical Physics Letters, 175:6 (1990), pp. 633-640.

Eisenberg, M. [1990]
"Descriptive Simulation: Combining Symbolic and Numerical Methods in the Analysis of Chemical Reaction Mechanisms."
Artificial Intelligence in Engineering 5:3, pp. 161-171.
(Also published as MIT AI Memo 1171, September, 1989.)

Abelson, H.; Eisenberg, M.; Halfant, M.; Katzenelson, J.; Sacks, E.; Sussman, G.J.; Wisdom, J.; and Yip, K. [1989]
"Intelligence in Scientific Computation."
Communications of the ACM, 32:5, pp. 546-562. (Also published as MIT AI Memo 1094.)

Leron, U. and Eisenberg, M. [1987]

"On a Knowledge-Related Paradox and Its Resolution."
Int. J. Math. Educ. Sci. Technol., 18:6 (1987), pp. 761-765.

Book Chapters

Eisenberg, M. and Eisenberg, A. [2000]
"Designing Real-Time Software Advisors for 3D Spatial Operations"
In S. O’Nuallain, *Spatial Cognition*, Amsterdam: John Benjamins, pp. 185-197
(Originally in *Proceedings of MIND III Conference on Spatial Cognition*, Cognitive Science Society of Ireland, Dublin, August 1998.)

Eisenberg, M. and Eisenberg, Ann N. [1999]
"The Developing Scientist as Craftsperson"
In N. Roberts, W. Feurzeig, and B. Hunter, eds. *Computer Modeling and Simulation in Pre-College Science Education*, NY: Springer-Verlag, pp. 259-281.

Eisenberg, M. and Eisenberg, Ann N. [1999]
"Middle Tech: Blurring the Division Between High and Low Tech in Education"
In A. Druin, ed. *The Design of Children's Technology*, San Francisco: Morgan Kaufmann, pp. 244-273.

Eisenberg, M. [1997]
"End-User Programming"
In Helander, M.; Landauer, T. K.; and Prabhu, P. (Eds) *Handbook of Human Computer Interaction*, 2nd Edition. Amsterdam: Elsevier Science, pp. 1127-1146.

Eisenberg, M. [1995]
"Creating Software Applications for Children: Some Thoughts About Design"
In *The Design of Computational Media to Support Exploratory Learning*, A. diSessa, C. Hoyles, and R. Noss with L. Edwards (eds.) Springer-Verlag, Heidelberg 1995, pp. 175-196.

Papers in Refereed Conference Proceedings

Eisenberg, M.; Eisenberg, A.; Buechley, L.; and Elumeze, N. [2006]
"Invisibility Considered Harmful: Revisiting Traditional Principles of Ubiquitous Computing in the Context of Education"
To appear in *Proceedings of IEEE 4th International Workshop on Wireless, Mobile, and Ubiquitous Technologies in Education (WMUTE 2006)*, Athens, Greece, November 2006.

Blauvelt, G. and Eisenberg, M. [2006]
"Computer-Aided Design of Mechanical Automata: Engineering Education for Children"
In *Proceedings of International Conference on Education and Technology (ICET 2006)*, Calgary, Alberta, Canada, pp. 61-66.

Buechley, L., Elumeze, N., and Eisenberg, M. [2006]
"Electronic/Computational Textiles and Children's Crafts"
In *Proceedings of Interaction Design and Children (IDC 2006)*, Tampere, Finland, pp. 49-56.

Elumeze, N. and Eisenberg, M. [2005]
"SmartTiles: Mobility and Wireless Programmability in Children's Construction and Crafts"
In *Proceedings of Wireless and Mobile Technologies in Education* (WMTE 2005), Tokushima, Japan, November 2005, pp. 230-237.

Hendrix, S. and Eisenberg, M. [2005]
"Computer-Assisted Pop-Up Design for Children: Computationally-Enriched Paper Engineering" (*One of 5 Best Paper Finalists*)
In *Proceedings of Eighth IASTED International Conference on Computers and Advanced Technology in Education (CATE 2005)*, Oranjestad, Aruba, pp. 47-52.

Andersen, D.; Bennett, C.; Huyn, P.; Rassbach, L.; Reardon, S.; and Eisenberg, M. [2005]

"Printing Out Trees: Toward the Design of Tangible Objects for Education"
In *Proceedings of LASTED International Conference on Education and Technology (ICET 2005)*, Calgary, Alberta, Canada, pp. 61-66.

Eisenberg, M.; Elumeze, N.; Buechley, L.; Blauvelt, G.; Hendrix, S.; and Eisenberg, A. [2005]
"The Homespun Museum: Computers, Fabrication, and the Design of Personalized Exhibits"
In *Proceedings of Creativity and Cognition 2005*, London UK, pp. 13-21

Eisenberg, M.; Buechley, L.; and Elumeze, N. [2004]
"Computation and Construction Kits: Toward the Next Generation of Tangible Building Media for Children"
In *Proceedings of CELDA 2004 (Cognition and Exploratory Learning in Digital Age)*, Lisbon Portugal, pp. 423-426

Eisenberg, M. [2004]
"Tangible Ideas for Children: Materials Science as the Future of Educational Technology"
In *Proceedings of Interaction Design and Children 2004*, College Park, MD, pp. 19-26.

Eisenberg, M.; Eisenberg, A.; Hendrix, S.; Blauvelt, G.; Butter, D.; Garcia, J.; Lewis, R.; and Nielsen, T. [2003]
"As We May Print: New Directions in Output Devices and Computational Crafts for Children"
In *Proceedings of Interaction Design and Children 2003*, Preston, UK, pp. 31-39.

Butter, D.; Eisenberg, M.; Garcia, J.; Lewis, R.; and Nielsen, T. [2003]
"Three-Dimensional Printing on a Budget: a Classroom-Friendly Technique for Viewing and Visualizing Solid Objects"
In *Proceedings of ED-MEDIA 2003*, Honolulu, HI, pp. 990-993.

Eisenberg, M. [2003]
"Creating a Computer Science Canon: a Course of 'Classic' Readings in Computer Science"
In *Proceedings of SIGCSE 2003*, Reno NV, pp. 336-340.

Eisenberg, M.; Eisenberg, A.; Gross, M.; Kaowthumrong, K.; Lee, N. and Lovett, W. [2002]
"Computationally-Enhanced Construction Kits for Children: Prototype and Principles"
Proceedings of ICLS (International Conference on the Learning Sciences), Seattle, WA, pp. 79-85.

Blauvelt, G. and Eisenberg, M. [2002]
"Printing Reconsidered: Exploring New Directions for Output Devices in Educational Technology"
Proceedings of ICLS (International Conference on the Learning Sciences), Seattle, WA.

Blauvelt, G. and Eisenberg, M. [2001]
"Machine Shop: Steps Toward Exploring Novel I/O Devices for Computational Crafts"
In *Proceedings of IEEE International Conference on Advanced Learning Technologies (ICALT 2001)*, August, Madison, WI.

Wrench, T.; Blauvelt, G.; and Eisenberg, M. [2000]
"The Rototack: Designing a Computationally-Enriched Craft Item"
Proceedings of DARE 2000 (Designing Augmented Reality Environments), ACM, Elsinore, Denmark, pp. 93-101.

Wrench, T. and Eisenberg, M. [1998]
"The Programmable Hinge: Toward Computationally Enhanced Crafts"
Proceedings of UIST 98, San Francisco, November, pp. 89-96.

Eisenberg, M.; Rubin, A.; and Chen, T. [1998]
"Computation and Educational Handicrafts: a Strategy for Integrative Design"
In *Proceedings of International Conference on the Learning Sciences, 1998*, Atlanta, December, pp. 84-90.

- Nishioka, A. and M. Eisenberg [1997]
 "Paper Modelling from a Distance: Computational Crafts on the Web"
Proceedings of Association for the Advancement of Computing in Education (AACE) ED-MEDIA/ED-TELECOM 97 Calgary, August 1997, pp. 757-762. (Recipient, Best Paper Award)
- Eisenberg, Michael; Ann Nishioka; and M. E. Schreiner [1997]
 "Helping Users Think in Three Dimensions: Steps Toward Incorporating Spatial Cognition in User Modelling"
Proceedings of 1997 International Conference on Intelligent Interfaces (IUI 97), Orlando, Florida, January 1997, pp. 113-120.
- Eisenberg, M. [1996]
 "The Thin Glass Line: Designing Interfaces to Algorithms"
Proceedings of CHI 96, Vancouver, April 1996, pp. 181-188.
- DiGiano, Chris and Michael Eisenberg [1996]
 "Designing Pedagogical Screen Savers"
CHI '96 Conference Companion, Vancouver, April 1996, pp. 185-186.
- Eisenberg, M. and Julie diBiase [1996]
 "Mathematical Manipulatives as Designed Artifacts: the Cognitive, Affective, and Technological Dimensions."
Proceedings of the International Conference on the Learning Sciences, 1996, Chicago, pp. 44-51.
- Eisenberg, M. and Ann Nishioka [1996]
 "Polyhedral Sculpture: the Path from Computational Artifact to Real-World Mathematical Object."
Proceedings of NECC '96 (National Educational Computing Conference), Minneapolis, June 1996, pp. 121-129.
- Blough, E. and Eisenberg, M. [1995]
 "Combining Programming Languages and Direct Manipulation in Environments for Computational Science"
Proceedings of DIS '95: Symposium on Designing Interactive Systems, Ann Arbor, August 1995, pp. 123-130.
- DiGiano, C. and Eisenberg, M. [1995]
 "Self-Disclosing Design Tools: A Gentle Introduction to End-User Programming."
Proceedings of DIS '95: Symposium on Designing Interactive Systems, Ann Arbor, August 1995, pp. 189-197.
- Di Biase, J. and Eisenberg, M. [1995]
 "Mental Imagery in the Teaching of Functions"
Proceedings of the National Educational Computing Conference, Baltimore, June 1995, pp. 129-134.
- Eisenberg, M. and Fischer, G. [1994]
 "Programmable Design Environments"
Proceedings of SIGCHI '94, Boston, April 1994, pp. 431-437.
 (An earlier version of this paper was published as University of Colorado Department of Computer Science Technical Report CU-CS-620-92, October, 1992.)
- Pea, R.; Eisenberg, M.; and Turbak, F. [1988]
 "Creatures of Habit: A Computational System to Enhance and Illuminate the Development of Scientific Thinking."
Proceedings of the Tenth Annual Conference of the Cognitive Science Society. August, 1988, pp. 340-346.
- Eisenberg, M.; Resnick, M. and Turbak, F. [1987]
 "Understanding Procedures as Objects."

In *Empirical Studies of Programmers: Second Workshop*. G. M. Olson, S. Sheppard, and E. Soloway, eds. Ablex, Norwood, NJ, 1987, pp. 14-32.

Additional Publications

Eisenberg, M. [2006]

"Rescuing Play" (Book review of K. Hirsh-Pasek and R. Golinkoff, *Einstein Never Used Flash Cards*; S. Olfinan, ed., *All Work and No Play*; and V. Gussin Paley, *A Child's Work*. Includes interview with K. Hirsh-Pasek and R. Golinkoff.)

To appear in *Journal of the Learning Sciences*.

Eisenberg, M. [2006]

"Cognition and Vocation" (Interview with M. Rose, author of *The Mind at Work*)

Journal of the Learning Sciences, 15:2, pp. 293-300.

Buechley, L.; Elumeze, N.; Dodson, C.; and Eisenberg, M. [2005]

"Quilt Snaps: A Fabric Based Computational Construction Kit" (Poster presentation)

In *Proceedings of Wireless and Mobile Technologies in Education (WMTE 2005)*, Tokushima, Japan, November 2005, pp. 219-221.

Eisenberg, M. [2005]

"Passive Kids, Aggressive Book" (Book review of P. Zoch, *Doomed to Fail: The Built-In Defects of American Education*)

Journal of the Learning Sciences 14:4, pp. 591-596.

Eisenberg, M. [2005]

"Constructing Kids" (Book review of B. Watson, *The Man Who Changed How Boys and Toys Were Made*)

Journal of the Learning Sciences, 14:3, pp. 443-447.

Eisenberg, M.; Eisenberg, A.; Blauvelt, G.; Hendrix, S.; Buechley, L.; Elumeze, N. [2005]

"Mathematical Crafts for Children: Beyond Scissors and Glue"

In *Proceedings of Art+Math=X Conference*, Boulder, CO, pp. 61-65.

Caravone, C.; Eisenberg, M.; Sanders, Z.; and Stockho, J. [2004]

"A Computationally-Enhanced Geoboard." (Poster presentation.)

In *Proceedings of CELDA 2004 (Cognition and Exploratory Learning in Digital Age)*, Lisbon, pp. 545-546.

Eisenberg, M.; Elumeze, N.; and Wrensch, T. [2004]

"Computationally-Enhanced Craft Items: Prototypes and Principles"

In *Design Computing and Cognition '04 Poster Abstracts*

Cambridge, MA, pp. 9-11

Hendrix, S. and Eisenberg, M. [2004]

"Computer-Assisted Engineering for Children: a Pop-Up Design Application." (Poster presentation.)

In *Proceedings of the International Conference of the Learning Sciences (ICLS 2004)*,

Los Angeles, CA, p. 606.

Eisenberg, M. [2003]

"King of Swing." [Review of G. Frederickson, *Hinged Dissections*]

In *American Scientist*, 91:3 (May-June), pp. 269-270.

Eisenberg, M. [2003]

"A classic problem." [Review of H. Simon, *Sciences of the Artificial*]

In *Journal of the Learning Sciences*, 12:3, pp. 445-450.

- Eisenberg, M. [2001]
Discovery learning, cognitive psychology of.
Article in *International Encyclopedia of Social and Behavioral Sciences*,
New York: Elsevier Science. (6:3736-9)
- Wrensch, T.; Eisenberg, M.; and Blauvelt, G. [2001]
"Computationally-Enhanced Craft Items: Toward 'Programmable Parts' for Educational Robotics"
In *AAAI Spring Symposium on Robotics and Education*, March, Palo Alto, CA.
- Eisenberg, M.; Wrensch, T.; and Blauvelt, G. [1999]
"Geometry-Specific Languages"
Colorado Department of Computer Science Technical Report CU-CS-886-99, October, 1999.
- Soloway, E., Grant, W., Tinker, R., Roschelle, J., Mills, M., Resnick, M., Berg, R., & Eisenberg, M.
[1999].
"Science in the palm of their hands."
Communications of the ACM, 42(8), 21-26.
- Eisenberg, M. [1996]
"Language-Based Simulation Environments: Issues for Design"
Proceedings of the 1996 International Conference on Simulation and Multimedia in Engineering Education, San Diego, January 1996, pp. 17-24.
- Eisenberg, M. [1995]
"Programmable Applications: Interpreter Meets Interface."
SIGCHI Bulletin, 27:2, pp. 68-83.
(This is a slightly revised version of a paper that originally appeared as MIT AI Memo 1325, October, 1991.)
- Eisenberg, M. and Nishioka, A. [1994]
"HyperGami: A Computational System for Creating Decorated Paper Constructions"
Proceedings of the Origami Science Meeting, Otsu, Japan, November 1994.
- Eisenberg, M. and Nishioka, A. [1994]
"HyperGami: The Printer as Toyshop"
Colorado Department of Computer Science Technical Report CU-CS-737-94, August, 1994.
- Eisenberg, M. [1993]
"Collaborative Applications for Long-Term Use"
AAAI Fall Symposium on Collaborative Software, Raleigh, North Carolina, November 1993
- Eisenberg, M. [1993]
"Bringing Programming and Direct Manipulation Together in Educational Computing."
In *Proceedings of the 10th International Conference on Technology and Education*, March 1993, pp. 1050-1053.
- Eisenberg, M. [1992]
"SchemePaint: a Programmable Application for Graphics."
University of Colorado Department of Computer Science
Technical Report CU-CS-587-92. June, 1992.
- Eisenberg, M. [1991]
"The Kineticist's Workbench: Combining Symbolic and Numerical
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