

Massachusetts Institute of Technology
School of Architecture and Planning Faculty Personnel Record

Name: Eric Klopfer
Department: Urban Studies and Planning / Teacher Education Program

1. Date of Birth:

2. Citizenship:

3. Education:

School	Degree	Date
Cornell University	B.S. (Biology)	May 1992
University of Wisconsin, Madison	Ph.D. (Zoology)	May 1997

4. Title of Ph.D. Dissertation

“Ecological and Evolutionary Consequences of Explicit Spatial Structure in Exploiter-Victim Systems”

5. Principal Fields of Interest:

K-12 Educational Technology – Computer Simulation Research and Development, Handheld Computers in the Classroom

Complex Systems in K-12 Education – Simplifying Science through Computer Simulations

The Education Arcade – Computer Games in the Classroom

Teacher Preparation – Alternative Pathways to Teacher Preparation

6. Name and Rank of Other Departmental Faculty in the Same Field: None

7. Name and Rank of Faculty of Other Departments in Same field:

Mitchel Resnick, Full Professor, Media Arts and Sciences

8. Non-MIT Experience

Employer	Position	Beginning	Ending
UMass Amherst	Postdoc/Lecturer	June 1998	June 1999
Amherst Schools	Technology Coordinator	Sept. 1997	June 1998
Learning Games Network	President	Sept 2008	Present

9. History of MIT Appointments

Assistant Professor	July 1999	June 2004
Associate Professor without Tenure	July 2004	June 2006
Associate Professor with Tenure	July 2006	Present

10. Consulting Record:

Harvard-Smithsonian Institute (2006-2007) – Environmental Science Simulations

New England Complex Systems Institute (2005-2006) – Global Modeling

Harvard School of Public Health (2005-2008) – Games for Learning Epidemiology

Minnesota Public Libraries (2007-Present) - Games for Learning

NAEP (2007 – 2008)

SimBiotic Software (2006 – present)

Ontar Corporation (2008 – present)

Learning Box (2008 – 2009)

WGBH Interactive (2008 – 2009)

Radford College (2009 – present)

Penn GSE (2009 – present)

TERC (2008 – present)

11. Department and Institute Committees

DUSP Research Committee (Chair)	2009	Present
Committee on Student Information Policy (CSIP)	2009	Present
HASS Requirement Subcommittee	2009	Present
Learning Management System (Chair)	2009	Present
MIT Subject Evaluation	2008	Present
Open Research and Publication	2008	2009
OCW Executive Director Search	2008	2008
DOS Faculty Advisory Committee	2008	Present
OCW Revenue Enhancement	2008	Present
DUSP UROP Coordinator	2007	Present
OCW SE Committee	2007	2009
MIT Classroom Committee	2007	Present
Next Generation Student Systems	2007	Present
MIT Council on Educational Technology	2004	Present
MIT K-12 Outreach (co-Founder/co-Chair)	2004	Present
Subcommittee on Mentoring	2002	2003
Open Courseware Faculty Advisory Committee	2002	Present
Network of Educators in Science & Technology (co-Chair)	2002	Present
MIT Committee on the Undergraduate Program	2001	2004
DUSP Undergraduate Committee	2000	Present

12. Government and Other Outside Committees, Service, etc.:

ACM Computers in Entertainment Editorial Board	2010	Present
Constructionism	2010	2010
National Academies – Games, Sims, Education	2009	Present
National Academy of Engineering Education Affiliate	2007	2007
International J. on Computer Games Technology, Editor	2007	Present
Journal of Science Education and technology, Editorial Board	2007	Present
Games Learning and Society, Organizing Committee	2007	Present
ACM ACE 2008, Review Committee	2007	2008
Santa Fe Institute Board	2006	Present
NECSI External Faculty	2005	Present
Australia Conference Review Committee	2005	2006
International Journal of Science Education Reviewer	2005	Present
Alliance for Complexity Education @ SFI (co-Founder)	2005	2008
Technology & Learning Games Education Committee	2005	2007
International Power Users Planning & Research Committee	2004	2006
Journal of Computer Assisted Learning Reviewer	2004	2007
MITES SEED Program - Advisory Committee	2001	Present
Tech Boston – Advisory Committee	2001	2006
FLAIRS – Florida Artificial Intelligence Research Society	2001	2001
Dean’s Committee – Boston Higher Education Partnership	2000	2006

13. Awards Received

NSF Postdoctoral Fellowship in SMTE (Science, Math, Engineering and Technology Education)	1998	2000
Scheller Career Development Chair	2001	2007
American Institute of Biological Sciences Education Award	2006	

14. Current Organization Memberships:

American Education Research Association (AERA)
National Association of Research in Science Teaching (NARST)
National Association of Biology Teachers (NABT)
National Council for Teachers of Mathematics (NCTM)
International Society for the Learning Sciences (ISLS)
International Society for Technology in Education (ISTE)
SFI Science Board

AIBS

15. Patents and Patent Applications Pending:

16. Professional Registration:

17. Projects:

Teacher Education Program - The mission of the MIT Teacher Education Program (TEP) is to develop a cadre of MIT undergraduates that will become the science and math teachers of tomorrow. Current responsibilities include teaching the core courses for the TEP, supervising the practicum work for student teachers, and developing partnerships with K-12 and informal education institutions.

StarLogo and Adventures in Modeling – Developing StarLogo software and curriculum for use in K-12 and undergraduate education to teaching modeling and simulation of complex systems. Supervise the development of software, develop curriculum and research the effectiveness of modeling and simulation in the classroom. StarLogo TNG provides a graphical programming language with 3D world to introduce students and teachers to programming through simulations and games in the classroom. Working to integrate games, simulations, programming and complex systems into science curriculum.

Augmented Reality and Ubiquitous Games – Designing simulations using location sensitive and peer to peer PDAs and cell phones. Developing software that embeds students in simulations of complex systems to study epidemics, genetics, economics and other similar systems. Simulations explore the use of location sensitive simulations using location awareness to engage in large scale investigations. Recent work focuses on student and teacher creation of location-based Augmented Reality Games and a new Ubiquitous Game platform that allows for mobile game play that fits the constraints of formal learning environments.

The Education Arcade- Co-founded The Education Arcade, a consortium of international game designers, publishers, scholars, educators, and policy makers who are exploring the new frontiers of educational media that have been opened by computer and video games. Director of The Education Arcade, working to develop, study and advocate for the use of games in the classroom. Developing educational games for math, science, and language learning.

18. Symposia Organized:

MIT Science and Engineering Program for Teachers (2005 – Present)
Learning Technologies (2000)

19. Teaching Experience of:

MIT

Term	Course	Enrollment (Approx)
FA 99	11.124 – Intro to Teaching and Learning	20
SP 00	11.125 – Obsv and Analysis in Classroom Settings	10
FA 00	11.124 – Intro to Teaching and Learning	18
SP 01	11.125 - Obsv and Analysis in Classroom Settings	12
SP 01	11.127/252 – Computer Modeling for Education	8
FA 01	11.124 – Intro to Teaching and Learning	35
SP 02	11.125 – Obsv and Analysis in Classroom Settings	20
SP 02	11.127/252 – Computer Modeling for Education	15
SP 02	1.991 - Service Learning in Environmental Education	10
FA 02	11.124 – Obsv and Analysis in Classroom Settings	25
FA 02	FAS – Challenges of the 21 st Century School	6
SP 03	11.127/252 Computer Modeling for Education	12
SP 03	11.125 - K-12 Teaching	30
FA02-SP 03	11.942/194/195 – K-12 Classroom Teaching	8
FA 03	11.124- Intro to Teaching and Learning	29
FA 03	FAS – Challenges of the 21 st Century School	6
SP 04	11.125 – K-12 Teaching	27
SP 04	11.127 – Games and Simulations for Education	16
FA03-SP 04	11.129/130/131 – K-12 Classroom Teaching	9
FA 04	11.124- Intro to Teaching and Learning	27
SP 05	11.125 – K-12 Teaching	23
SP 05	11.127 – Games and Simulations for Education	16
FA04-SP 05	11.129/130/131 – K-12 Classroom Teaching	13
FA 05	11.124- Intro to Teaching and Learning	21
SP 06	11.125 – K-12 Teaching	14
SP 06	11.127 – Games and Simulations for Education	12
FA05-SP 06	11.129/130/131 – K-12 Classroom Teaching	10
IAP 06	11.178 – Wireless Media	6
SP 06	7.014 – Introductory Biology (Lecturer)	
FA 06-SP 07	Sabbatical	
FA 07	11.124 - Intro to Teaching and Learning	15
FA 07-SP08	11.129 - K-12 Classroom Teaching	10
SP 08	11.125	20
SP 08	11.27	15
FA 08	11.124	13
FA 08	11.129	5
FA 08	6.087 – Mobile Application Development	60
SP 09	11.125	18
SP 09	11.127/CMS.590	16
FA 09	11.124	22
FA 09	Freshman Seminar	8
FA 09	11.129/11.131	13
SP 10	11.125	26
SP 10	11.127/CMS 590	18

* = Approx enrollment before add/drop date

** = Registered + listeners

Other Teaching Experience – UMass Amherst

FA 98	Interactive Internet- From the Web to the Classroom
SP 99	Instructional Design for the Web

20. Publications

Books

- Colella, V., E. Klopfer, and M. Resnick. (2001) *Adventures in Modeling: Exploring Complex, Dynamic Systems with StarLogo*. Teachers College Press.
- Klopfer, E. (2008) *Augmented Learning – Research and Design of Mobile Educational Games*. MIT Press, Cambridge, MA.
- Klopfer, E., Haas, J. *Learn NBC* (in preparation)

Book Chapters

- Klopfer, E., K. Squire and H. Jenkins 2004. *Environmental Detectives: PDAs as a Window into a Virtual Simulated World* in Kerres, Michael/ Kalz, Marco/ Stratmann, Jörg/ de Witt, Claudia (eds.). Didaktik der Notebook-Universität. Münster: Waxmann Verlag
- Klopfer, E. and A. Begel. 2005. *Starlogo: A Programmable Complex Systems Modeling Environment for Students and Teachers*. In A. Adamatzky and Komosinski, M. Eds. Artificial Life Models in Software, Springer.
- Klopfer, E., H. Scheintaub, and M. Scheintaub. 2009. *Complexity and Biology – Bringing Quantitative Science to the Life Sciences Classroom*. In Press for F. Roberts. Untitled,
- Klopfer, E. 2007. Lightly Augmenting Reality. Space, Time, Play. Freidrich von Borries, S. Walz editors.
- Klopfer, E., Scheintaub, H., Huang, W, Wendel, D. StarLogo TNG: Making Agent Based Modeling Accessible and Appealing to Novices In Artificial Life Models in Software (2009)
- Klopfer, E., Jenkins, H., Perry, J., et al. *Serious Games: Mechanisms and Effects*. (2010) U. Ritterfeld, M. Cody, P. Vorderer Eds. From Serious Games to Serious Gaming. Routledge/LEA
- Klopfer, E., Osterweil, S., *Are Games All Childs Play?* In Press for P. Maharg and S. De Freitas. Eds. Learning Through Play,
- Klopfer, E., Coulter, R., Perry, J. and Sheldon, J. *Discovering Familiar Places: Learning through Mobile Place-Based Games*. In Press for S. Barab, K. Squire and C. Steinkuehler. Games, Learning, and Society: Learning and Leading in the Digital Age. Cambridge University Press
- Klopfer, E. and Purushotma, R. *Using Simulations as a Starting Point for Constructing Meaningful Learning Games*. In Press for J. Fromme and A. Unger. Eds. Computer Games/Players/Game Cultures: A Handbook on the State and Perspectives of Digital Game Studies. Springer
- Klopfer, E. and Squire, K. *Mobile Games and Learning: Looking Back and Looking Forward*. In Press for M. Barnet and J. Vanides. Eds. [TITLE NEEDED]

Papers in Refereed Journals

- Ives, A. and E. Klopfer. 1997 Spatial variation in abundance created by stochastic temporal environmental variation. *Ecology*, 78: 1907-1913.
- Klopfer, E. and A. Ives. 1997 *Aggregation and the coexistence of competing parasitoid species*. Theoretical Population Biology 52: 167-178.
- Caton, E., J. Cherrier, E. Farnsworth, S. Franklin, B. Hufnagel, E. Klopfer, J. Russell, and B. Sayler. 1998 *New Niches for Life Scientists*. *Science* 282:1266-1267.
- Klopfer, E., V. Colella, and M. Resnick. 2002. *New Paths on a StarLogo Adventure*. *Computers and Graphics*. 26: 615-622
- Klopfer, E. and A. Begel. 2003. *StarLogo in the Classroom and Under the Hood*. *Kybernetes*. 32: 15 -37
- Klopfer, E. 2003. Technologies to Support the Creation of Complex Systems Models – Using StarLogo Software with Students. *Biosystems* 71: 111-123.
- Jenkins, H., E. Klopfer, K. Squire and P. Tan. 2003 *Entering the Education Arcade*. ACM: Computers in Entertainment. 1: 17-17.
- Klopfer, E. S. Yoon, and L. Rivas. 2004 *Comparative Analysis of Palm and Wearable Computers for Participatory Simulations*. *Journal of Computer Assisted Learning* 20, 347-359.
- Klopfer, E. S. Yoon. and T. Um. 2005 *Young Adventurers- Modeling of Complex Dynamic Systems with Elementary & Middle School Students*. *Journal of Computers in Math and Science Teaching* 24(2), 157-178.
- Klopfer, E. and S. Yoon. 2005. Using Palm Technology in Participatory Simulations of Complex Systems: A New Take on Ubiquitous and Accessible Mobile Computing. *Journal of Science Education and Technology*. 14(3), 287-295.
- Meir, E., J. Perry, D. Stal, S Maruca and E. Klopfer. 2005. *How effective are simulated molecular-level experiments for teaching diffusion and osmosis?* *Cell Biology Education*. 4, 235-248.

- Klopfer, E. and S. Yoon. 2005. Developing Games and Simulations for Today and Tomorrow's Tech Savvy Youth. *Tech Trends*. 49(3) 33-41.
- Klopfer, E. and K. Squire. 2005. Environmental Detectives – The Development of an Augmented Reality Platform for Environmental Simulations. In Press for Educational Technology Research and Development.
- Klopfer, E. and K. Squire. *Case Study Analysis of Augmented Reality Simulations on Handheld Computers*. *Journal of the Learning Sciences*, Vol. 16, No. 3: pages 371-413.
- McFarland, D., and E. Klopfer. *Scholar Practitioner Information Networks for Education (SPINE)*. In Press for the Teacher's College Record.
- Yoon, S. & Klopfer, E. (2006). Feedback (F) Fueling Adaptation (A) Network Growth (N) and Self-Organization (S): A Complex Systems Design and Evaluation Approach to Professional Development. *Journal of Science Education and Technology*, 15(5-6), 353-366
- Rosenbaum, E., Klopfer, E., and Perry, J. (2007). *On Location Learning: Authentic Applied Science with Networked Augmented Realities*. *Journal of Science Education and Technology*.
- Klopfer, E. (2007). *Blurring Lines with Mobile Learning Games*. *Educational Technology Magazine*.
- Guryan, J., Jacobs, B, Klopfer, E., Groff, J. (2008) Using Technology to Explore Social Networks and Mechanisms Underlying Peer Effects in Classrooms. *Developmental Psychology*.
- Klopfer, E., Scheintaub, H., Huang, W, Wendel, D., Roque, R. (2009) *The Simulation Cycle - Combining Games, Simulations, Engineering and Science Using StarLogo TNG*. *Journal of E-Learning and Digital Media* 6(1) 71-96
- Klopfer, E. and Osterweil, S. (2009) *The Boom and Bust and Boom of Educational Games*. In Press for *Transactions in Edutainment*.
- Klopfer, E. and Sheldon, J. *Augmenting Your Own Reality: Student Authoring of Science-Based Augmented Reality Games*. In Press for *New Directions In Youth Development*
- Klopfer, E., Sheldon, J., Perry, J. and Chen, V. *Ubiquitous Games for Learning (UbiqGames): Weatherlings, A Worked Example*. In Press for *Journal of Computer Assisted Learning*.
- Haas, J, Hammerman, J, Klopfer, E. Miller, C. *User Behavior in NBC News' Multimedia Educational Site, iCue*. In Prep for the *Journal of Interactive Learning and Media*.

Refereed Conference Proceedings

- Klopfer, E. and V. Colella. 1999. *Structuring Collaboration in Workshops and Classrooms: The StarLogo Community of Learners*. *Computer Supported Collaborative Learning (CSCL)*, Palo Alto, CA.
- Taylor, J., R. Noll, V. Colella, and E. Klopfer. 2001. *Creating and Analyzing Models in StarLogo: A Secondary Science Approach*. *National Association of Research in Science Teaching (NARST)*, St. Louis, MO.
- Klopfer, E., and E. Woodruff. 2002. The Impact of Distributed and Ubiquitous Computational Devices on the Collaborative Learning Environment. *Computer Supported Collaborative Learning (CSCL) 2002*.
- Woodruff, E., E. Klopfer, G. Andrews, K. Mackinnon, S. Yoon, N. Chandra. 2002. *Distributed computational devices for collaborative learning*. *Candian Society for the Study of Education*.
- Klopfer, E. *Adventures in Modeling 2002. Teaching and Learning about Complex Systems in Ecology*. *Biomathematics and Related Computational Problems (BIOCOMP) 2002*.
- Klopfer, E., K. Squire and H. Jenkins. 2002. *Environmental Detectives PDAs as a Window into a Virtual Simulated World*. *International Workshop on Wireless and Mobile Technologies in Education*.
- Klopfer, E., T. Um. 2002. *Young Adventurers- Modeling of Complex Dynamic Systems with Elementary & Middle School Students*. *International Conference on the Learning Sciences*.
- Klopfer, E., K. Squire, and H. Jenkins. 2003. *Augmented Reality Simulations on PDAs*. *American Education Research Association (AERA)*, Chicago 2003.
- Klopfer, E., and E. Woodruff. 2003. *Platforms for Participatory Simulations - Exploring Systems and Generating Discourse with Wearable and Handheld Computers*. *Conference on Computer Supported Collaborative Learning (CSCL)*, Oslo 2003.
- Yoon, S., E. Klopfer, E. Woodruff, H. Scheintaub. 2003. *Investigating How a Wearable Computer Technology Influences Opinion Dynamics*. *Proceedings of Society for Chaos Theory*, Boston, 2003.
- Squire, K., E. Klopfer, S. Barab, and C. Dede. 2004. *Virtual and Augmented Reality Simulations in Education*. *American Education Research Association (AERA) 2004*
- Scheintaub, H., E. Klopfer and S. Yoon. 2004. *Complex Systems Modeling Supports and Extends Secondary School Science Learning*. Submitted to *National Association of Research in Science Teaching (NARST) 2004*
- Klopfer, E. and K. Squire. 2004. *Getting Your Socks Wet: Augmented Reality Environmental Science*. Submitted to the *International Conference on the Learning Sciences (ICLS) 2004*
- Yoon, S. E. Klopfer, G. Richardson, and J. Taylor. 2004. *Insights Into the Complexity of Designing for Professional Development Networks in Educational Technologies: Tensions Between Structure and Agency*. Submitted to the *International Conference on the Learning Sciences (ICLS) 2004*

- Yoon, S. & Klopfer, E. 2005. Social network influences in a complex systems design for professional development in educational technology use: Results of a first phase implementation. *In the proceedings of the 3rd annual Hawaii International Conference on Education*, Honolulu, HI.
- Yoon, S. & Klopfer, E. 2005. *Using palm technology in participatory simulations: A new take on ubiquitous and accessible mobile computing*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, PQ. 2005.
- Klopfer, E., J. Perry, K. Squire, M. Jan. 2005, *Collaborative Learning through Augmented Reality Role Playing*. Paper presented at the conference on Computer Supported Collaborative Learning, Taiwan. 2005.
- Klopfer, E., J. Perry, K. Squire, M. Jan. 2005 *Mystery at the Museum – A Collaborative Game for Museum Education*. Paper presented at the conference on Computer Supported Collaborative Learning, Taiwan. 2005
- Yoon, S. and E. Klopfer. Feedback, Adaptation, Network Capital and Self-Organization (FANS): The Application and Evaluation of a Complex Systems Framework for Professional Development. Paper presented at the American Educational Research Association, San Francisco, CA.
- Klopfer, E., A. Begel, C. McCaffrey, and D. Wendel. 2006. *Teaching Game Programming through StarLogo TNG*. Paper presented at the International Conference for the Learning Science 2006
- Klopfer, E., E. Rosenbaum, and J. Groff. 2006. *Assessing Success in Networked Augmented Realities*. Paper presented at Games, Learning and Society, Madison, WI
- Rosenbaum and Klopfer, Boughner, Rosenheck CSCL 2007 - Engaging Students in Science Controversy Through an Augmented Reality Role-Playing Game
- Klopfer, E., H. Scheintaub. 2008. AERA StarLogo TNG – Making content-centered game and simulation development accessible to students and teachers.
- Yoon, S. and E. Klopfer. 2008 NARST Measuring In-Service Middle and High School Teachers Understanding of Complex Systems Through an Analysis of Computational Model Construction.
- Klopfer, E. and J. Perry. 2008. ICLS AR Gone Wild: Two Approaches to Using Augmented Reality Learning Games in Zoos. International Conference on the Learning Sciences, Utrecht 2008.
- Klopfer, E., H. Scheintaub. 2008. ICLS StarLogo TNG – Science in Student-Programmed Simulations. International Conference on the Learning Sciences, Utrecht 2008.
- Klopfer, E., H. Scheintaub. 2008. ICLS StarLogo TNG – Making content-centered game and simulation development accessible to students and teachers. International Conference on the Learning Sciences, Utrecht 2008.
- Klopfer, E. *Augmented Reality: Using a Simplified Game Editor to Spark Imaginations*. Paper presented at Games Learning and Society, Madison, WI 2009.
- Klopfer, E. *Mobile Games and Education: Current Projects and State of the Practice*. Paper presented at Games Learning and Society, Madison, WI 2009.
- Klopfer, E. *Gaming the Future of Science Learning*. Paper presented at Games Learning and Society, Madison, WI 2009.
- Lomas, D., Klopfer, E., Scullin, C., Lamenza, C., Macklin, C. (2010) *Diversifying Mobiles: Participatory Learnings*, Macarthur Digital Media and Learning, San Diego 2010.
- GLS 2010

Other Professional Publications

- Colella, V, E. Klopfer, and M. Resnick. 1998. *StarLogo Community of Learners*. The Logo Exchange. v.17 #2: 20-22.
- Colella, V. and E. Klopfer. 2000. *Seeding Change: Bringing Modeling to Science Teachers and their Students*. The Bulletin of The Santa Fe Institute. v. 15, #2.
- Colella, V. and E. Klopfer. 2001. Changing the Nature of Science Teaching and Learning through Modeling. The Logo Exchange. v.20.
- Klopfer, E., K. Squire and P. Tan. 2003. *Top 10 Innovations*. Technology and Learning. November, v.24.
- Klopfer, E. 2005. Playing to Learn. State of the Art Computer Games go to School. Access Learning, July/August 2005.
- Klopfer, E. 2007. Mixing Programming with Science. Educational Technology Magazine.
- Klopfer, E. 2009. *Moving Learning Games Forward*, white paper. The Education Arcade, Massachusetts Institute of Technology
- Klopfer, E. 2009. *Using the Technology of Today in the Classroom Today*. white paper. The Education Arcade, Massachusetts Institute of Technology
- Klopfer, E., Huang, W., Wendel, D., and Scheintaub, H., 2010. *Constructing Learning*. Learning and Leading with Technology.

Papers Presented at Academic and Professional Conferences

- Klopfer, E. 1999. *Constructing Computer Models in the Classroom using StarLogo*. Paper presented at Technology and Education, Amherst, MA.
- Klopfer, E., and V. Colella. 2001. *Adventures in Modeling*. Paper Presented at Special Interest Group in Graphics (SIGGRAPH) 2001.
- Yoon, S., E. Klopfer, E. Woodruff, H. Scheintaub. 2003. *Investigating How a Wearable Computer Technology Influences Opinion Dynamics*. Society for Chaos Theory, Boston, 2003.
- Yoon, S. and E. Klopfer. 2004. *Using Palm Technology in Participatory Simulations of Complex Systems*. National Association of Research in Science Teaching (NARST) 2004
- Silverman, B., B. Mikhak, E. Klopfer and S. Scheintaub. 2004. *A New Kind of Science Education - Lessons Learned from StarLogo and Perspectives on NKS – New Kind of Science*, Boston (NKS) 2004
- Klopfer, E. and S. Yoon. 2004. *New Technologies to Enhance Learning*. Power Users Summit, United Nations, NY.
- Klopfer, E., and J. Perry. 2005. *Authoring Toolkits for Augmented Reality Simulations*. International Conference on Interaction, Design and Children 2005. Boulder, CO.
- Lee, I., G. Malone and E. Klopfer. 2006. *Adventures in Gaming*. Presentation at NECC, San Diego, CA.
- Klopfer E. and J. Perry. 2007. *Augmenting Learning with Handheld Gaming Technologies*. Paper presented at Games Learning and Society, Madison, WI 2007.
- Klopfer, E. 2007. *StarLogo TNG: Graphical Programming for 3D Simulation and Game Design*. Paper presented at Games Learning and Society, Madison, WI 2007.
- J. Perry, E. Klopfer, B. Coulter, J. Sheldon 2008. *LIONS: Augmented Reality Game Design by Middle School Students in an After-School Science Club*. Paper presented at Games Learning and Society, Madison, WI 2008.
- J. Perry, E. Klopfer, L. Stump . 2008. *Zoo Scene Investigators: An Augmented Reality Mystery Game at the Columbus Zoo & Aquarium*. Paper presented at Games Learning and Society, Madison, WI 2008.
- E. Klopfer, S. Osterweil, A. Chisholm, D. Roy. 2008. *Two Approaches to Language-Learning Games*. Paper presented at Games Learning and Society, Madison, WI 2008.
- Steinkeuler, C. Squire, K. Barab, S. Thomas, D. Pepler, K., & Klopfer, E. 2008. *Games and Participation: Why Games Matter to Educators*. American Educational Research Association 2008.
- Scheintaub, H. & Klopfer, E. 2008. *StarLogo TNG – Making Content-Centered Game And Simulation Development Accessible To Students And Teachers* American Educational Research Association 2008.
- Fefferman, N, Horwitz, P., Ketelhut, D., Klopfer, E. Stegman, M., Clark, D. (2010) *Worlds of Wonder: Can Video Games Teach Science?* AAAS Annual Meeting, San Diego, CA 2009.

Invited Presentations and Workshops

- American Association of Universities – Teacher Preparation, Fall 2001
- ITESO – Workshop on Complex Systems – Guadalajara, Mexico Spring 2002
- Museum Institute of Teaching Science – Modeling for Museums – Boston, January 2002
- Boston Museum of Science – Participatory Simulations – Boston, Spring 2002
- Computer Supported Collaborative Learning – Computer Games and Simulations in Education – Seattle, October 2002
- Massachusetts Association of Science Teachers– StarLogo in Science Education – Worcester, November 2002
- University of Alaska, Anchorage – Complex Systems Colloquium – March 2003
- American Association of Colleges of Teacher Education – Video Games and Learning February 2004
- MIT Alumni Association of New Mexico – Adventures in Modeling May 2004
- American Association of Colleges of Teacher Education – Video Games and Learning- February 2004
- Technology and Learning’s Tech Forum – MIT Games and Education – October 2004
- Serious Games Summit – Augmented Reality Simulations for Learning – October 2004
- Florida Community College – New Technologies in Science and Math Learning – April 2005
- Technology and Learning’s Tech Forum – Research in Games Education – October 2005
- Rebuilding Louisiana through Education – Governor’s Conference – October 2005
- Korea Education and Research Information Service – Handheld Games for Learning – November 2005
- Learning Lab Denmark – Augmented Reality Games for Learning – January 2006
- Beyond Technology – The Next Generation of Games and Simulations for Learning – May 2006
- New England Complex Systems Institute – Learning Complex Systems – June 2006
- Santa Fe Institute – International Learning and Complex Systems – September 2006
- Columbia University – Scholar Practitioner Information Networks – August 2006
- Smithsonian Institute – Handheld Games for Informal Learning – September 2006
- E Learning Symposium, George Mason University - Mobile Games for Learning - June 2007

EuroLogo - StarLogo TNG - Making game and simulation development accessible to students and teachers - August 2007
Fifth Technology and Education Congress, The Inter American University of Puerto Rico - Augmenting Reality and Learning with Mobile Games - September 2007
Minneapolis Public Library – November 2007
Maine Initiative on Science Technology Engineering and Mathematics – January 2008
Opportunistic RF Localization for Next Generation Wireless Devices - June 2008
Association of Mathematics Teachers in New England Conference- November 2008
PICNIC Young in Amsterdam – Augmented Learning- September 2008
Malmo University – Augmented Learning - September 2008
MIT Alumni Association of Cape Cod – 2008
MIT Alumni Association of Rhode Island – 2008
Grey Thumb Artificial Life – 2008
Institut für Erziehungswissenschaft, Otto von Guericke Universität (OvGU), Magdeburg, Germany (remote) – 2009
Malmö University, Malmö, Sweden – Spring 2009
Haifa University, Haifa, Israel (remote) – Spring 2009
IT World Summit, Barcelona, Spain – Fall 2009
NTU, NIE, NUS, Singapore – Fall 2009
Learning and the Brain, Massachusetts Institute of Technology, Cambridge, MA, USA – Fall 2009
ARVEL SIG at the American Educational Research Association Convention, Denver, Colorado, USA – Spring 2010

Press

Boston Globe – February 18, 2001 – *Program Puts Fourth Graders to Test – Class Tries Learning Tool Developed at MIT Lab*
Boston Globe – July 8, 2001 – *Director at MIT Talks About Science*
Tech Talk – July 18, 2001 – *Klopfer sparks interest in teaching, learning science and math*
MIT IS Newsletter
Tech Talk – April 10, 2002 – *School kids get excited by science*
CCTV – April 1, 2002 *StarLogo at the Agassiz School*
Santa Fe New Mexican – April 15, 2002 – *The New Scientific Method*
Worcester Telegram and Telegraph – February 23, 2003 – *Students Play Genetics Mating Game*
Boston Globe – July 2003 – *Interactive Game Teaches Students Genetics*
MIT Tech Talk – November 2003 – *Education Arcade zooms in on games in the classroom*
Wilmington Advocate – 2005 – *Piloting New Ways of Learning*
The Village Voice – 2005 – *Game On!*
AP – 2004 - *Video Games Teach More than Hand-Eye Coordination*
Technology Review – 2004 - *The Education Arcade*
Technology Review – 2004 – *Look Listen Walk*
NY Times – 2004 - *To Study History Students Can Rewrite It*
MIT Spectrum – Spring 2005 – *Playing Games*
Sydeny Morning Herald 2005 – *Play and Learn*
Business Week – 2005 *Education Games Crank Up the Fun*
US News – 2005 – *Teachin With Tech*
CBS 4 News – April 2005 – *Participatory Simulations in the Classroom*
The Escapist – 2006 – *Playing to the Test*
National Geographic – 2006 - *Mobile Games Superimpose Virtual Fun on the Real World*
Wired News - 2007 - *Wii + Second Life = New Training Simulator*
Wired News 2007 – *Mind Reading Games*
CNN Online- 2007 - *Second Life's 2nd Value: Testing Ideas*
Christian Science Monitor 2009
Boston Globe 2009 – *Augmented Reality*
Boston Globe 2009 – *How Video Games are Good for the Brain*
PC World 2009 – *Play Games with Your Resume*
National Public Radio's All Things Considered – March 29, 2010 – *From Chalk to Bytes*
CNN Online – July 12, 2010 – *Google aims to make app creation easy*
Google Labs Online – July 12, 2010 – *App Inventor for Android: On The Shoulders of Giants*

Awards

Top Ten Innovations – The Education Arcade is selected as one of the top 10 innovations in education technology by Technology and Learning Magazine. Contributed to story showcasing the Education Arcade.

American Institute of Biological Sciences – Education Award 2006 AIBS

IDG – Backflow, Woosh/Waker

Finalist, 2009 Independent Games Festival

Finalist, 2010 Indie Game Challenge

Software Developed

StarLogo 2.0 – Recently released a new version of StarLogo software (in collaboration with Mitchel Resnick, MIT Media Lab)

StarLogo DDA – Online discussion area to support StarLogo users

Environmental Detectives – Handheld based computer simulations (in collaboration with the Kurt Squire and Games to Teach Project)

Charles River City – Outdoor location based simulations for middle school students.

Outbreak at MIT – Indoor location based simulation designed to train epidemiologists.

Augmented Reality Simulation Platform – Platform in development to allow the creation of location aware computer simulations for handheld computers.

Mystery at the Museum – Indoor location aware simulation game platform launched at the Museum of Science.

Participatory Simulations – Wearable computer based simulations on the evolution of cooperation, genetics, market formation, and predator-prey relationships. Palm based simulations on genetics, cooperation, predatory prey relationships and epidemics.

StarLogo TNG – An entirely new version of StarLogo aimed at lowering the bar of simulation development in the classroom. Employs a new graphical user interface for designing simulations as well as 3D representations of phenomena to broaden the range of applications.

POSIT – Public Opinions on Science Using Information Technology – Location based games engaging learners in controversial issues in science and technology.

Augmented Reality Game Editor – Provides students and teachers with a drag and drop method of creating their own handheld based augmented reality games. Editors available for both designers and students.

Palmagotchi – Mobile game to teach evolution that built on the theme of virtual pets.

Ubiquitous Games – A mobile web-based platform for creating and deploying games in formal learning environments. First game, called Weatherlings, is a battle game that combines Pokemon style game play with real weather data. Second set of games focuses on high school biology learning.

In development – Physics game about displacement, velocity and acceleration. Biology game about microbial movement.

Record of Research Funding

Grants and Research Contracts

NSF Postdoctoral Fellowship - PI (1998-1999)– **\$50K** - Professional Development of Teachers Using Computer Simulations

NSF - Co-PI (2003-2004) **\$35K** - Osmobeaker

Leapster - PI (2003-2004) **\$35K** – Leapster Assessment

NSF ITEST - PI (2003-2006) **\$1 million** – New Mexico Adventures in Modeling

Young Faculty Leaders Forum - PI (2004-2006) **\$50K** – Enhancing and Assessing Student Understanding of Biological Concepts with Participatory Simulations

Intel Foundation - PI (2005) **\$27.5K** – Augmented Reality Simulations for Learning

NSF ITEST – (2005-2008) **\$1.4 million (MIT \$90K)** - EcoScienceWorks: Exploring and Modeling Ecosystems Using Information Technology

StarSchools – Department of Education Co-PI (2006-2009) - **\$1.5 million (MIT \$450K)** - Improving Mathematics and Literacy Learning Through Augmented Reality Simulation Games With Emerging Mobile Technologies

StarSchools – Department of Education (2006-2008) - \$15 million (**MIT \$500K** through Comparative Media Studies with Maryland Public Television) – Learning Games to Go

Microsoft iCampus – PI (2006) – **\$230K** - Public Opinions of Science and Technology

NBC News – Co-PI (2006-2008) – iCue – **\$450K + \$400K + \$400K** - Assessment

NSF ITEST – Advisor (2005-2008) - Community for Rural Education, Stewardship and Technology

NSF AYS - Co-PI (2007-2009) - Project GUTS @ SFI

NSF - Co-PI (2008-2009) - **\$400k (MIT \$50K)** EvoBeaker II
Columbus Zoo - PI (2007-2010) - **\$100K + \$80K + \$50K + \$40K** - Augmented Reality in Informal Education
Hewlett Foundation - PI (2007-2008) - **\$200K** - Games for Learning
NSF AYS – (2008-2009) – **\$125K** - LIONS with Missouri Botanical Gardens
Department of Homeland Security – STEM Learning (2008) - **\$163K** – Games and Simulations for STEM Education
NSF ISE (2008-10) - **\$194,000**, Kids Survey Network
NSF ITEST (2009-11) - **\$518,000** Community Science Investigators
NSF ISE (2009-11) - **\$1,400,000** – Mass Extinction: A Curated Game
Linde Foundation (2009-11) **\$65,000 + \$75,000** - Simulations Systems and Computational Literacy
NSF (2009-11) **\$247,000** - Transactive Narrative: An Inclusive Game-Based Programming Context
Gambit (2009-11) **\$150,000** – The Role of Narrative in Learning Games
NIH (2009-11) **\$853,000** - Ubiquitous Games for Biology

Theses Supervised

Monique Lo (MCP -2001) – Modeling and Study of Infectious Diseases
Douglas Ricket (MEng- 2002) – Women’s Technology Program
Robert Lillianfeld – (S.B. 2003) – Analyzing the TEAL Project as a Tool for Teaching University-Level Electricity and Magnetism
Priscilla Cheung (MEng 2003) – Augmented Reality Simulations
Nick Bozard (S.B. 2003) - Networks: A Participatory Simulation
Jon Wolfe (S.B. 2003) – Augmented Reality User Interfaces
Kodjo Hesse (S.B. 2003) – Tracking Users in Augmented Realities
Jon Hyler (S.B. 2004) – Indoor Location Based Augmented Realities
Tricia Um (S.B. 2004) – Simulation Development for Middle Schools Children
Spencer Cross (SB 2005) – Data Integration in Augmented Realities
Mark Boudreau (SB 2005) - Combining Indoor/Outdoor Augmented Realities
Bruce Dibelo (SB 2005)- NPCs in Indoor Augmented Realities
Nicholas Behrens (SB 2005) – Network Protocols for Augmented Realities
Lauren Clement (SB 2005) – User Interface Design in StarLogo
Chester Tse (SB 2005) – 3D Collisions in StarLogo
Ben Povlich SB 2006 – Augmented Reality Simulations for Handhelds
Daniel Wendell MEng 2006 – 3D Terrain in StarLogo TNG
Corey McCaffrey MEng 2006 – Textual Interfaces to Graphical Programming
Xia Lu MEng 2007 – Location Aware Performance Support Systems
Hector Beltran SB 2006 – Location Aware Wireless Games
Robert Kwok SB 2006 – Server Based Wireless Games
Katherine Klesch SB 2006 – Redesigning an Interface for Palmagotchi
Ed Dieterle PhD (Harvard)
Dan Roy MS 2007 – Mobile Massive Multiplayer Games
Ricarose Roque MEng 2007 – CodeBlocks – Generic Graphical Programming Languages
John Jackman MEng 2007 – Peer to Peer Networking in StarLogo TNG
Ben Schmeckpeper MEng 2007 – Editing Augmented Realities
Eitan Gilnet MEng 2008 – Audio Games
Tiffany Wang MEng 2008 – Intuitive Game Design
Victor Costan SB 2007 – Simple Networking Systems for Mobile Games
Melinda Tang SB 2007 – Improving User Interface in Handheld Games
Thomas Robinson SB 2007 – Undoing in StarLogo TNG
Mark Burroughs SB 2007 – Terrain Editing in SpaceLand
Kirupa Chinnathambi SB 2007 – Creating a Fun, Feature Filled Game Editor
Mike D’Ambrosio – MEng 2008
Yu-Lirng Tu – MEng 2008
Linda Ye SB 2008 –
Aidan Ho SB 2009 –
John Zhang MEng 2009 –
Robert Falconi MEng 2010 –
Chris Wong MEng 2009 –
Matt Ng MEng 2009 -

Owen Lin MEng 2010 –
Yunus Sasmaz Meng 2010 –
Vijay Umapathy SB 2010 –
Nicole Bieber SB 2010 –
Curtis Liu SB 2010 –
Joe Laurendi SB 2010 –
Chris Cheng SB 2010 –
Angel Irizarry - MEng 2010 -