

Curriculum Vita

Deborah Gail Tatar

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Education

Stanford University, Stanford, CA. 1990-1998

Ph.D. Psychology, received Jan. 1998. Doctoral thesis: Social and Personal Effects of Preoccupied Listeners. Thesis Advisor: Leonard M. Horowitz. Thesis Committee: Herbert H. Clark, Robert Zajonc, Lee Ross, and Thomas Walker (Linguistics). Chief areas of interest: attentional engagement, trust, effects of technology, psycholinguistics.

Harvard University, Cambridge, MA. 1977-1981

B.A. received June 1981. Cum Laude in General Studies. Concentration: English and American Literature and Language. Course Work in math and science. Founding member Harvard-Radcliffe Cognitive Sciences Society.

Current Position

Virginia Tech Associate Professor August 2003-present

Associate Professor of Computer Science and, by courtesy, Psychology. Member, Center for Human-Computer Interaction. Member, Program for Women and Gender Studies. Tenure granted: June, 2008.

Honors, Awards and Grants

REESE?

September, 2008

NSF CPATH. \$120,000. IIS-0829625 Distributed Expertise In Enhancing Computing Education Computing Education With Connections To The Arts. Redesigning courses in Computer Science to involve cross disciplinary and cross-institutional projects (Perez-Quinones, M., PI; Harrison, S., Co-PI; Tatar, D., Co-PI)

April, 2008

NSF IIS-ITR \$193,641. Creative IT. Examining Creativity with IT in Engineering Design (X-CITE). Redesigning and studying the introductory Engineering Education course. 8/1/08-7/31/10. (Johri, A., PI; Lohani, V., Co-PI; Tatar, D., Co-PI)

December, 2006

NSF BFA DGA. \$33,185. Human-Computer Interaction Doctoral Research Consortium at ACM CHI 2007: Human Factors in Computing Systems. Support for Doctoral Consortium. 12/05/06-11/30/07. IIS-07-7398. D. Tatar, PI, 100%

April, 2006

NSF SGER. \$103,839. Embodied Communication: Vivid Interaction with History and Literature. Create computationally supported embodied experiences in collaboration with multi-institutional, multi-disciplinary teams. 4/1/06-3/31/08. IIS-0624701. (F. Quek, PI; W. Winchester, Co-PI; D. Tatar, Co-PI)

March, 2006

NSF CRI. \$399,999. Interfaces for the Embodied Mind. 3/15/06-5/1/07. IIS-0551610. Equipment to support the exploration and development of embodied interaction. (F. Quek, PI; D. Tatar, Co-PI)

June, 2004

Best Paper. Roschelle, J., Penuel, W. R., Yarnall, L., Shechtman, N. & Tatar, D. (2004). Handheld tools that "informate" assessment of student learning in science: A requirements analysis. *Proceedings of the Second IEEE International Workshop on Mobile and Wireless Technologies in Education*, JungLi, Taiwan, pp. 149-153. Reprinted *Journal of Computer-Assisted Learning*, 21(3), pp.190-203.

September, 2004

NSF Interagency Education Research Initiative Phase II Grant. \$5,983,000. Working with Teachers and Leveraging Technology to Scale Opportunities to Learn More Complex and Conceptually Difficult Middle School Mathematics. Large-scale controlled, rigorous testing of math teachers using or not using a technology for teaching the math of change and variation (SimCalc) in replacement units. 9/1/04-8/31/08. REC-0437861. (J. Roschelle, PI; D. Tatar, Co-PI; B. Hopkins, Co-PI; S. Empson, Co-PI; S. Hegedus, Co-PI. Virginia Tech portion \$795,000: D. Tatar, PI, 100%)

September, 2004

NSF ITR/IERI Grant. \$1,308,820. Tuple Spaces as a Foundation for Collaborative Learning. Explores the application of core distributed systems techniques to the coordination of multiple learners in distributed collaborative educational activities 9/1/04-8/31/06. REC 0427783. (J. Roschelle, PI; C. Patton, Co-PI; S.R. Chaudhury, Co-PI; D. Tatar, Co-PI. Virginia Tech portion, \$211,461: D. Tatar, PI, 100%).

September, 2002

Interagency Education Research Initiative Phase I Grant. \$1,000,000. Scaling Up SimCalc: Professional Development for Integrating Technology to Teach

More Complex Mathematics. Piloting and instrument development for rigorous experimentation with math teachers. 9/1/02-8/31/04. REC-0228515. (J. Roschelle, PI; D. Tatar, Co-PI; J. Kaput, Co-PI; B. Hopkins, Co-PI) (brought to VT \$64,045)

January, 2002

NSF EHR \$1,700,000. Handheld Assessment: Portable Scaffolds for Project-Based Learning in Science Inquiry? Participatory design with teachers in Beaufort South Carolina of hand-held tools for formative inquiry in science. 1/1/02-12/31/04. NSF REC-0126197. (W. Penuel, PI; D. Tatar, Co-PI; L. Yarnall, Co-PI; J. Roschelle, Co-PI) (brought to VT: Yr. 1 \$28,181)

December, 2000

IERI Planning Grant. \$116,123. Planning a Rigorous Experimental Trial of SimCalc's Approach to Increasing Access to Complex Mathematical Ideas. Prepared for Phase I and current Phase II rigorous experimentation through work defining the intervention and key scaling questions. 12/15/00-2/28/02 NSF-REC 0089094. (J. Roschelle, PI; D. Tatar, Senior Personnel)

October, 2000

NSF ROLE. Understanding Math Classroom Affordances of Networked, Hand-Held Devices. The NetCalc project developed and utilized handheld-based technology to support learning and teaching the math of change and variation. It showed highly significant results in both high and low-SES 8th grade classrooms. 10/1/00-9/30/04. REC-0087771. (J. Kaput, PI; J. Roschelle, Co-PI; D. Tatar, Senior Personnel) Total: \$1,500,000 (SRI: \$683,578)

January 1995

Research grant, Center for Conflict and Negotiation, Stanford University

June 1992 - August 1992

Summer fellowship. Center for the Study of Language and Information, Stanford University.

September 1994 - September 1995

Stanford Graduate Fellowship, Stanford University.

September 1990 - September 1992, September 1993- 1994

National Science Foundation graduate student fellowship.

June 1981

Radcliffe College Elizabeth Cary Agassiz Certificate of Merit for high academic achievement.

PUBLICATIONS

Books and Monographs

1. Tatar, D. *A Programmer's Guide to Common LISP*. 1986. Digital Press: (Bedford, MA). 337 pages. A text on the Common LISP programming language aimed at advanced and experienced programmers. Translated into Japanese.

Book Chapters

1. Burge, J., and Tatar, D. (2009) Affect and Dyads: Conflict across Different Technological Media. In (S. Harrison, Ed.) *Media Spaces: 20+ Years of Mediated Life*. New York: Springer-Verlag. p. 127-146.
2. Brecht, J., DiGiano, C., Patton, C., Tatar, D., Chaudhury, S. R., Roschelle, J. and Davis, K. (in press) Supporting Collaborative Learning Activities with a General-Purpose Interface. To appear in (M. Ally, Ed.) *Mobile Learning in Education and Training*. Athabasca Canada: Athabasca University Press. Reprinted from *Proceedings of mLearn 2006, the 5th World Conference on Mobile Learning*.
3. Roschelle, J., Tatar, D. and Kaput, J. (in press) Getting to scale with innovations that deeply restructure how students come to know mathematics and science. In Kelly, E. A. and Lesh, R. (Eds.) *Handbook of design research in mathematics, science and technology education*. Mahwah, NJ: Erlbaum.
4. Patton, C., Tatar, D. and Dimitriadis, Y. (2008) Trace Theory, Coordination Games, and GroupScribbles. In (J. Voogt and G. Knezek, Eds.) *International Handbook of Information Technology In Primary and Secondary Education*. New York: Springer.
5. Tatar, D., Lin, S. and Lee, J.S. Playground Games and the Dissemination of Control in Computing and Learning (2008). In (DiGiano, C., Goldman, S. & Chorost, M., Eds.) *Educating Learning Technology Designers*. Mahwah, New Jersey: Lawrence Erlbaum Associates. p. 230-257
6. Roschelle, J., Patton, C. and Tatar, D. (2007) Designing Networked Handheld Devices to Enhance School Learning. In (M. Zelkowitz, Ed.) *Advances in Computing*, New York: Academic Press, 70, p. 2-52.
7. Vahey, P., Tatar, D. and Roschelle, J. (2006) Using Handheld Technology to Move Between the Private and Public in the Classroom. In van't Hooft, M. A., & Swan, K. (Eds.) *Ubiquitous computing: Invisible technology, visible impact*. Mahwah, NJ: Erlbaum. pp. 187-210

8. Gray, J. and Tatar, D. (2004) Sociocultural Analysis of Online Professional Development: A Case Study of Personal, Interpersonal, Community, and Technical Aspects in Barab, S.A., Kling, R., & Gray, J. H. (Eds.). *Designing for Virtual Communities in the Service of Learning*. New York: Cambridge University Press. pp. 404-436.
9. Tatar, D., Foster, G. and Bobrow, D. (1991). Design for Conversation: lessons from Cognoter. *International Journal of Man-Machine Studies*, 34(1), pp. 185-209. Reprinted in Ronald M. Baecker (Ed.) *Readings in Groupware and Computer-Supported Cooperative Work*. 1993. Morgan Kaufman (San Mateo, CA). pp. 596-608
10. Stefik, M., Foster, G., Bobrow, D., Tatar, D. and Lanning, S. (1987). WYSIWIS Revised: Experiences with Multi-user Interfaces. *ACM Transactions on Office Information Systems*, 5:2, pp. 147-167 (April 1987); *Proceedings of the Computer Supported Cooperative Work Conference*, Austin TX (December 1986), pp 276-290. Reprinted in Ronald M. Baecker (Ed.) *Readings in Groupware and Computer-Supported Cooperative Work*. 1993. Morgan Kaufman (San Mateo, CA). pp. 585-595

Dissertation and Theses

1. Tatar, D. Social and Personal Effects of Preoccupied Listeners. Ph.D. Dissertation. Dept. of Psychology, Stanford University, 1998.

Refereed Journals

Top Journals in Education

1. Roschelle, J., Shechtman, N., Tatar, D., Hegedus, S., Hopkins, B., Empson, S., Knudsen, J., and Gallagher, L. (in press) Integration of Teacher Training, Curriculum and Technology for Advancing Middle School Mathematics: Three Large-Scale Studies. *American Educational Research Journal*.
2. Roschelle, J., Tatar, D., Shechtman, N., Knudsen, J. (2008) The role of scaling up research in designing for and evaluating robustness. *Educational Studies in Mathematics*, Special Issue on Democratizing Access to Mathematics through Technology: Issues of Design, Theory and Implementation— In Memory of James Kaput (S. Hegedus and R. Lesh, Eds.). 68(2), p. 149-170.
3. Tatar, D., Roschelle, J., Knudsen, J., Shechtman, N., Kaput, J. & Hopkins, B. (2008) Scaling Up Innovative Technology-Based Math. *Journal of the Learning Sciences*. 17(2) pp. 248-286.

Journals in Educational Computing

4. Tatar, D., Harrison, S., Crandell, A., & Schaefer, M. (2008). Using place as provocation: In situ collaborative narrative construction. *RCETJ*, 4 (1). Retrieved January 2, 2009, from <http://www.rcetj.org/?type=art&id=87830&>
5. Penuel, B., Tatar, D., and Roschelle, J. (2004) The Role of Research on Contexts of Teaching Practice in Informing the Design of Handheld Learning Technologies. *Journal of Educational Computing Research*. 30(4), pp. 353-370.
6. Roschelle, J., Penuel, W. R., Yarnall, L., Shechtman, N. & Tatar, D. (2004). Handheld tools that "informate" assessment of student learning in science: A requirements analysis. *Journal of Computer-Assisted Learning*, 21(3), pp.190-203. Reprinted from *Proceedings of the Second IEEE International Workshop on Mobile and Wireless Technologies in Education*, JungLi, Taiwan. pp. 149-153. **Voted Best-Paper.**
7. Jucks, R., Paechter, M.R., and D. Tatar, (2003) Learning and Collaboration in Online Discourses. *International Journal of Educational Policy, Research & Practice*, 4(1), pp. 117-147.
8. DiGiano, C., Patton, C., Roschelle, J., Tatar, D., Yarnall, L., Manley, M. (2003) Collaboration Design Patterns: Conceptual Tools for Planning for The Wireless Classroom. Re-printed in *Journal of Computer-Assisted Learning*, 19(3), pp. 284-297. *Proceedings of the IEEE International Workshop on Wireless and Mobile Technologies in Education*, 2002, pp. 39-47.

Human-Computer Interaction and Computer-Supported Collaborative Work Articles

Journal of Computer-Supported Collaborative Work is perhaps the only journal that is devoted to collaborative work. It is international and known for its philosophical rigor.

9. Harrison, S. and Tatar, D. (2008) People, Events, Loci: The relation of semantic frames in mediated experience. *Journal of Computer-Supported Cooperative Work*, Special Issue on Place. (L. Ciolfi, L. Bannon and G. Fitzgerald, Eds.) 17:197-133

The journal Human-Computer Interaction is one of the most prestigious and long-lived journals in the area of Human-Computer Interaction.

10. Tatar, D. (2007) The Design Tensions Framework. *Journal of Human-Computer Interaction*. 22(4), p. 413-451.

IEEE Computer, a journal published monthly in magazine format, is more accessible to readers than a pure academic journal. Articles are refereed, however, and may have great visibility and impact. It is published by the Computer Society of the Institute for Electrical and Electronics Engineers (IEEE).

11. Roschelle, J., Tatar, D., Chaudhury, S. R., Dimitriadis, Y., Patton, C. & diGiano, C. (2007) Ink, Improvisation and Interactive Engagement: learning with tablets. *IEEE Computer*, 40(9), 42-48.
12. Tatar, D., Roschelle, J., Vahey, P. and Penuel, W. (2003) Handhelds Go to School. *IEEE Computer*, 36(9), pp. 30-37. Acceptance rate: 5/87 (6%)
13. Reeves, B., Lang, A., Kim, E. Y. and Tatar, D. (1999) The Effects of Screen Size and Viewer Contents on Attention and Arousal. *Journal of Media Psychology*, 1(1), pp. 49-67.
14. Tatar, D., Foster, G. and Bobrow, D. (1991). Design for Conversation: lessons from Cognoter. *International Journal of Man-Machine Studies*, 34(2), pp. 185-209. Reprinted in Ronald M. Baecker (Ed.) Readings in Groupware and Computer-Supported Cooperative Work. 1993. Morgan Kaufman (San Mateo, CA). pp. 596-608
15. Stefik, M., Foster, G., Bobrow, D., Tatar, D. and Lanning, S. (1987). WYSIWIS Revised: Experiences with Multi-user Interfaces. *ACM Transactions on Office Information Systems*, 5(2) pp.147-167; *Proceedings of the Computer Supported Cooperative Work Conference*, Austin TX (December 1986), pp. 276-290. Reprinted in Ronald M. Baecker (Ed.) Readings in Groupware and Computer-Supported Cooperative Work. 1993. Morgan Kaufman (San Mateo, CA). pp. 585-595

Psychology

16. Horowitz, L., Krasnaperova, E., Tatar, D., and Nelson, K. (2001) The Way to Console Depends on the Goal. *Journal of Experimental Social Psychology*. 37, pp. 49-61.
17. Pratto, F., Tatar, D. and Conway-Lanz, S. (1999) Who Gets What and Why: Determinants of Social Allocation. *Political Psychology*, 20(1), pp. 127-150.

Refereed Conference Proceedings

Top and high impact conferences in my field

1. Dickey-Kurdziolek, M., Schaefer, M., Tatar, D. and Renga, I. (2010) Lesson from ThoughtSwap-ing: Increasing Participant's Coordinative Agency in Facilitated Discussion. CSCW 2010, Feb. 6-10, Savannah, GA. p. 81-90. Acceptance Rate: 20%

2. Roschelle, J., Shechtman, N., Hegedus, S., Pierson, J., McLeese, M., Tatar, D. (2008) Cognitive Complexity in Mathematics Teaching and Learning: Emerging Findings in a Large-Scale Experiment. *Proceedings of the International Conference of the Learning Sciences*. June 24-28, 2008. Utrecht, Netherlands.
3. Tatar, D., Lee, J.S. and Alaloula, N. (2008) Playground Games: A design strategy for supporting and understanding coordinated activity. *Proceedings of the Conference on the Design of Interactive Systems, 2008*. February 25-27, 2008. Capetown, South Africa. Acceptance rate: 33%
4. Harrison, S., Back, M., & Tatar, D. (June, 2006) "It's Just a Method": A Pedagogical Experiment in Interdisciplinary Design. *Proceedings of Design for Interactive Systems 2006 (DIS 2006)*, June 26-28. Penn State University, State College Pennsylvania, ACM Press. pp. 261-270. Acceptance Rate: 25%
5. Roschelle, J., Schank, P., Brecht, J., Tatar, D., Chaudhury, S.R. (November, 2005) From Response Systems to Distributed Systems for Enhanced Collaborative Learning, *International Conference on Computers and Education 2005 (ICCE 2005)*. November 28-Dec. 2. Nanyang Technological University, Singapore. IOS Press, pp. 363-370. Acceptance rate: 75/271 (28%)
6. Kim, K. & Tatar, D. (2005) Weak Guidance with "Look" Functionality in Handheld-based Classroom Activities. *Proceedings of the 2005 Conference on Computer-Supported Collaborative Learning*, Taipei, Taiwan, May 29-June 4, 2005. pp. 296-300. Acceptance rate: 31%
7. Vahey, P., Tatar, D., and Roschelle, J. (2004) Leveraging Handhelds to Increase Student Learning: Engaging Middle School Students with the Mathematics of Change. *Proceedings of the Sixth International Conference of the Learning Sciences*. Los Angeles, CA, June 22-26, 2004. pp. 553-560.

More specialized venues

8. Roschelle, J., Tatar, D., Shechtman, N., Hegedus, S. (2008) Using an Integration of Technology, Curriculum, and Teacher Professional Development at Scale to Improve Student Learning of Important Middle School Mathematics, *Society for Research on Educational Effectiveness (SREE)*, March 2-4, Crystal City, Virginia.
9. Brecht, J., DiGiano, C., Patton, C., Davis, K., Roschelle, J., Tatar, D. (2006). Coordinating networked learning activities with a general-purpose interface. *Proceedings of mLearn 2006, the 5th World Conference on Mobile Learning*. Also, in press, in (M. Ally, Ed.) *Mobile Learning in Education and Training*. Athabasca Canada: Athabasca University Press.

10. Kim, K., Tatar, D. and Harrison, S. (November, 2006) Handheld-Mediated Communication to Support the Effective Sharing of Meaning in Joint Activity. *WMUTE 2006, The 4th IEEE International Conference on Advanced Learning Technologies*, November 17-18. Athens Greece. pp. 82-89. Acceptance Rate: 10.3%
11. Tatar, D., Lin, S., Dickey, M. (2005) Visualizing Handheld-Based Classroom Activity. *Proceedings of the 2005 International Symposium on Collaborative Technologies and Systems*. St. Louis, MS, May 15-19, 2005. pp. 313-320. Acceptance rate: 63%.
12. Kim, K. and Tatar, D. (2004) Designing knowledge management systems: reuse and integration of findings in computer supported cooperative work. *IRI 2004. Proceedings of the 2004 IEEE Conference on Information Reuse and Integration, 2004*. pp. 338-343.
13. Roschelle, J., Penuel, W. R., Yarnall, L., Shechtman, N. & Tatar, D. (2004). Handheld tools that "informate" assessment of student learning in science: A requirements analysis. *Proceedings of the Second IEEE International Workshop on Mobile and Wireless Technologies in Education*, JungLi, Taiwan. pp. 149-153. **Voted Best-Paper**. Reprinted in *Journal of Computer-Assisted Learning*, 21(3), pp. 190-203.
14. Roschelle, J., Vahey, P., Tatar, D., Kaput, J., & Hegedus, S. J. (2003). Five key considerations for networking in a handheld-based mathematics classroom. In N. A. Pateman & B. J. Dougherty & J. T. Zilliox (Eds.), *Proceedings of the 2003 joint meeting of PME and PMENA* (Vol. 4, pp. 71-78). Honolulu, Hawaii: University of Hawaii.
15. DiGiano, C., Patton, C., Roschelle, J., Tatar, D., Yarnall, L., Manley, M. (2003) Collaboration Design Patterns: Conceptual Tools for Planning for The Wireless Classroom. *Proceedings of the IEEE International Workshop on Wireless and Mobile Technologies in Education*, 2002, pp. 39-47. Re-printed in *Journal of Computer-Assisted Learning*, 19(3), 284-297. Acceptance Rate: 75/231 (23%)

Short Papers

16. Beaton, R., Harrison, S., Tatar, D. (2010, in press) Digital Drumming: A study of co-located highly coordinated dyadic collaboration. Acceptance rate: 20%
17. Dimitriadis, Y., Asensio-Pérez, J.iI, Hernández-Leo, D., Roschelle, J., Brecht, J., Tatar, D., Chaudhury, S. R., diGiano, C., & Patton, C. (2007) From socially-mediated to technology-mediated coordination: A study of design tensions using Group Scribbles, *Conference on Computer Supported Collaborative Learning 2007*. p. 161-164. Acceptance rate: 52%

18. Kim, K., Tatar, D. and Harrison, S. (2007) Sharing Visual Context to Facilitate Late Overhearers' Understanding of the Handheld-Based Learning Activity, *Conference on Computer-Supported Collaborative Learning 2007*. p. 364-367. Acceptance rate: 52%
19. Lin, S., Tatar, D., Harrison, S., Roschelle, J. & Patton, C. (2006) Learning When Less is More: "Bootstrapping" Undergraduate Programmers as Coordination Designers. *PDC 2006 Proceedings of the Participatory Design Conference*, Trento Italy, August 1-5, 2006. pp. 133-136.
20. Tatar, D., Grey, J. and Fusco, J. (2002) Rich Social Interaction in an Online Community for Learning. In *Electronic Proceedings of the Conference on Computer-Supported Cooperative Learning*. January, 2002 (Bloomington CO)
21. Mackay, W., Guindon, R., Mantei, M., Suchman, L., Tatar, D. (1988) Video: Data for Studying Human-Computer Interaction. In *Proceedings of the SigCHI Conference on Human Factors in Computing Systems*. May, 1988 (Washington, D.C.) pp. 133-137.
22. Tatar, D. (1987) Colab, A New Medium for Communication and Cooperation. *International Conference on Computers and Information*, December 1987 (Pittsburgh, PA)

Other Refereed Publications and Presentations

1. Lin, S. and Tatar, D. (2010) Beyond Current Social Computing: Challenges to Complex Coordinated Systems Design, *CSCW Horizons*, Savannah Georgia, Feb. 6-10, 2010
2. Schaefer, M., Harrison, S., Tatar, D. (2010) Can CSCW Technologies Help Us Reconstruct Places?, *CSCW Horizons*, Savannah Georgia, Feb. 6-10, 2010
3. Fishman, B., Penuel, W., Hegedus, S., Tatar, D., Dickey, M., Moniz, R., Salton, S., Brookstein, A., and Roschelle, J. (2009) What happens when the research ends?: Factors related to the sustainability and scalability of a research-based innovation. AERA 2009
4. McLeese, Michelle and Deborah Tatar. "Teacher Control and Student Academic Outcomes: A Qualitative Analysis of a Technological Mathematical Intervention in Texas." Southern Sociological Society Meetings April 1-4, 2009 New Orleans, LA.
5. Tatar, D., Harrison, S. (2009) The Three Paradigms of HCI. *Human-Computer Interaction Consortium*. February 2-February 7, Frazer, Colorado.

6. Tatar, D. and Dickey-Kurdziolek (2008) Beyond Simple Evaluation: The case of an effective classroom technology and its prospects for impact. *Human-Computer Interaction Consortium*. January 30-February 3, Frazer, Colorado.
7. Stroter, A. and Tatar, D. (2008) Teacher-Student Racial and Ethnic Congruence: Race Still Matters in the Classroom, *American Educational Research Association (AERA) 2008*, New York, NY, March 24-28
8. Tatar, D., Ravitz, J., Stroter, A. & Zin, T. (2008) Recruiting for a Rigorous Experimental Study in Education *American Educational Research Association (AERA) 2008*, New York, NY, March 24-28
9. Roschelle, J., Shechtman, N. & Tatar, D. (2008) Enhancing Mathematics Learning with Technology: Civic, Teacher, Student and Content Perspectives on Scaling Up SimCalc, *American Educational Research Association (AERA) 2008*, New York, NY, March 24-28
10. Roschelle, J., Tatar, D., Empson, S.E., Hegedus, S. & Hopkins, B. (2008) Mapping "Geography of Opportunity" in a Large Scale Randomized Experiment on Enhancing Mathematics with Technology, *American Educational Research Association (AERA) 2008*, New York, NY, March 24-28
11. DiGiano, C., Tatar, D. and Kireyev, K. (2006), "Learning from the Post-It: Building Collective Intelligence through Lightweight, Flexible Technology," *Conf. suppl. ACM SIG Conf. Computer-Supported Cooperative Work (CSCW 2006)*, ACM Press, pp. 65–66.
12. Kim, K. and Tatar, D. (July, 2006) The Effects of Handheld Network Service, "LOOK", on the Acquisition of Common Ground, *Society for Text and Discourse 2006* (extended abstract).
13. Tatar, D. and Burge, J. (July, 2006) Communication Media and Dyadic Conflict, *Society for Text and Discourse 2006* (extended abstract).
14. Roschelle, J., Tatar, D. and Kaput, J. (April, 2006) Getting to scale with innovations that deeply restructure how students come to know mathematics and science, *American Educational Research Association Meeting*, April 8-12. San Francisco, CA.
15. Harrison, S. & Tatar, D. (March, 2006) More than a Method. *Human Computer Interaction Educators Workshop 2006*, March 25-28. Limerick, Ireland.
16. Roschelle, J., Tatar, D., Kaput, J. & Hopkins, B. (2005) Scaling Up Innovative Technology-Based Math With a Wide Variety of 7th Grade Teachers, *National Conference of Teachers of Mathematics*, April 2005, San Diego, CA. (Extended abstract)

17. Tatar, D. (2005) Pragmatics of Emotional Computing: Emotion in Mediated Communication. *Human-Computer Interaction Conference*. Boulder, CO., January, 2005. (Extended abstract)
18. Roschelle, J., Tatar, D., Hopkins, B., Kaput, J., Shechtman, N. (2004) Scaling Up Restructuring Knowing: From Design Experiments to Experimental Design. *American Educational Research Association*. (Abstract)
19. Vahey, P., & Tatar, D. (2004). Designing Representation-Rich, Wireless Handhelds for Teaching Mathematics. *American Educational Research Association*. San Diego, CA. (Abstract)
20. Vahey, P., Tatar, D., Roschelle, J. (2003) Emerging Themes in Peer-to-Peer Collaboration Over Rich Representations. *National Council of Teachers of Mathematics*, April 9, 2003, San Antonio, TX. (Extended abstract)
21. Tatar, D., Vahey, P. and Roschelle, J. (2003) Beaming, Teaming and Talk: Handheld Wireless Math Meets Middle School Sociality, *National Council of Teachers of Mathematics*, April 9, 2003, San Antonio, TX. (Extended abstract)
22. Tatar, D., Fusco, J. and Gray, J. (2003) Learning and Collaboration in Online Discourses, *American Educational Research Association*, April 2003, Fort Lauderdale, FL. (Poster presentation)
23. Tatar, D. (2003) Using Artifacts in a Virtual Seminar, *American Educational Research Association*, April 2003, Fort Lauderdale, FL. (Poster presentation)
24. Tatar, D., Fusco, J. and Gray, J. (2002) Rich Social Interaction in Online Communities for Learning, *Computer Supported Collaborative Learning*, January 2002, Bloomington, CO. (Poster presentation)
25. Gray, J. and Tatar, D. (2001) Online Learning Communities in Sociocultural Contexts: Four Planes of Analysis, *American Educational Research Association*, Seattle, WA, April 10-14, 2001. (Poster presentation)
26. Tatar, D. (1998) Attentional Engagement. *Society for Interpersonal Psychology*, June 1998, Snowbird, Utah. (Poster presentation)
27. Tatar, D. (1998) Listening and Shyness. *Anxiety Disorders Association of America*, March 1998, Boston, MA. (Poster Presentation)
28. Tatar, D. (1996) Social and Personal Consequences of a Preoccupied Listener. *Stanford-Berkeley Social and Personality Talks*, May 1996, Stanford, CA. (poster Presentation)

Technical Reports and Other Non-Peer Reviewed Output

1. Roschelle, J., Tatar, D., Shechtman, N., Hegedus, S., Hopkins, B., Knudsen, J. and Stroter, A. (2008) Can a technology-enhanced curriculum improve students learning of important mathematics? Technical Report 01, SRI International, www.math.sri.com
2. Mackay, W. and Tatar, D. (1989). Introduction to the Special Issue on Using Video as a Research and Design Tool. *SigCHI Bulletin*, October 1989, 21(2), pp. 48-50.
3. Tatar, D. (1989) Using Video-Based Observation to Shape the Design of a New Technology. *SigCHI Bulletin*, October 1989, 21(2), pp. 108-111.

Additional Scholarly Output: Invited Talks and Conference Presentations

1. Tatar, D. (May, 2007) Practice Into Theory: from serious work about learning in classroom environments to serious questions about the playful nature of control and coordination in computing. Invited **Keynote Speech**. *First Annual Conference on Pen-based Learning Technologies*, May 24-25, 2007, Catania, Italy.
2. Tatar, D. (May, 2007) Design Tensions in Learning Technologies: Creating, exploring and promoting classroom systems for equity, excellence, and human values. Invited talk, Stanford University, School of Education. May 7, 2007.
3. Harrison, S., Tatar, D. and Sengers, P. (April, 2007) The Three Paradigms of HCI. Alt.chi Presentation, at SigCHI 2007, San Jose, CA. April 28, 2007.
4. Tatar, D. (March, 2007) Practice Into Theory: from serious work about learning in classroom environments to serious questions about the playful nature of control and coordination in computing. Invited talk, University of Washington, Seattle, Information School. March 8, 2007.
5. Tatar, D. (January, 2007) Practice Into Theory: from serious work about learning in classroom environments to serious questions about the playful nature of control and coordination in computing. Invited talk, University of Illinois, Chicago, Department of Computer Science. January 28, 2007.
6. Tatar, D. (2006) Scaling Up SimCalc: Educational Research that Makes a Difference. Invited Talk, Interagency Educational Research Initiative Principle Investigator's Meeting, Arlington, VA, August 31, 2006.
7. Tatar, D. & Lin, Sirong (April, 2006) Playground Games and the Dissemination of Control in Teaching and Learning. Invited Talk, Penn State University Information Sciences and Technology School, April 17, 2006.

8. Vahey, P., Tatar, D., & Crawford, V. (2003). Autonomy and Collaboration: An Emerging Theme in Handheld use in K-12 Education. Presentation at the UC Berkeley School of Education, Berkeley, CA, April, 2003.
9. Tatar, D. (2000) Read All About It: An eyetracking study of online news reading, Berkeley SIMS, Graduate Class on Quantitative Methods, November 3, 2000.
10. Tatar, D. (1989) What We Need to Know to Build Groupware, Santa Clara University, Graduate Seminar in Computer Science, Santa Clara, CA, October 1989.
11. Tatar, D. (1989) A Preliminary Report on Using Video to Shape the Design of a New Technology, Workshop on Video as a Research and Design Tool, Boston, MA, January 1989.
12. Tatar, D. (1987) Colab. Invited Talk, Open University, Milton Keynes, England, December 1987.
13. Tatar, D. (1987) Colab, EuroPARC, Cambridge, England, December 1987.

Poster Presentations

1. Kim, K., Tatar, D., Harrison, S. (2008) Common Ground Can be Efficiently Achieved by Capturing a Screenshot in Handheld-Based Learning Activity, International Society of the Learning Sciences, Utrecht, Netherlands, June 24-29, 2008.
2. Roschelle, J., Schank, P., Brecht, J., Harris, Z., Chaudhury, S. R., and Tatar, D. (2005) Tuple Space for Collaborative Learning, New Paradigms in Using Computers, IBM Almaden Research Center, June 11, 2005.
3. Tatar, D., Penuel, W., Roschelle, J. and Shechtman, N. (2005) WHIRL, New Paradigms in Using Computers, IBM Almaden Research Center, June 11, 2005.
4. Tatar, D., Vahey, P., Roschelle, J. (2005) NetCalc, New Paradigms in Using Computers, IBM Almaden Research Center, June 11, 2005.
5. Harrison, S. and Tatar, D. (2005) Anywhere Museum, New Paradigms in Using Computers, IBM Almaden Research Center, June 11, 2005
6. Tatar, D. (2001) Design Tensions in a Handheld Wireless Math Environment, NSF-DFG Early Career Workshop, October 2001 (Tuebingen Germany).
7. Roschelle, J. and Tatar, D. (2000) Getting to Scale with Innovations that Restructure Knowing. IERI PI's Workshop, Arlington, VA. Dec. 4-5, 2000. (poster presentation)

8. Tatar, D. and Lewenstein, M. (2000) Read All About It: An eyetracking study of online news reading, Stanford CSLI IAP Conference, November 9, 2000. (poster presentation)
9. Tatar, D. and Horowitz, L. (1998) Attentional Engagement in Listening, American Psychological Association, August 1998 (San Francisco, CA).
10. Tatar, D. and Horowitz, L. (1996) Social and Personal Consequences of a Preoccupied Listener, Conference of the Western Psychological Association, April 1996 (San Jose, CA).
11. Tatar, D. and Pratto, F. (1995) Influences on the Allocation of Social Resources; Stanford-Berkeley Social and Personality Talks, April 1995 (Berkeley, CA).
12. Tatar, D. and Bly, B. (1992) Joint Context in Discourse, Conference of the Society for Text and Discourse, June 1992 (San Diego, CA).

Workshops

1. Tatar, D., and Patton, C. (2006), Coordination and Control in Handheld Mobile Computers for Education: Identifying Cross-cutting Factors, International Conference of the Learning Sciences, Bloomington Indiana, June 27, 2006.
2. Mackay, W., and Tatar, D. (1989). Using Video as a Research and Design Tool.

Panels

1. Vega, L., Tatar, D., (2009), Baby Loading: Managing Being a Mother in Graduate School. Grace Hopper Celebration of Women in Computing. Tuscon Arizona, June, 2009
2. Druin, A., Strommen, E. (organizers), Barranca, M., Sacher, H., Tatar, D., Soloway, E. (2002) Kids and Wireless Computing, ACM Conference on Computer-Human Interaction, CHI, Minneapolis, MN. April 2002. Pp. 704-705.
3. Tatar, D. (1988) Video as Data, CHI 1988, May 1988 (Washington, D.C.)

Video Presentations

1. Experiments in Computer Support for Teamwork (videotape), with G. Foster. Part of the program of the COIS '88 conference, Palo Alto, March 23-25, 1988; SigCHI '88, Washington DC, May 15-19, 1988; CSCW '88, Portland Oregon, September 26-28, 1988; III CNAE (National Conference on Office Automation) Sao Paulo Brazil, November 21-24, 1988; and IEEE Computer Society satellite symposium (CompuSat), Oct. 1988.

Web Publications

1. www.poynter.org/eyetrack2000. With Marion Lewenstein, Andrew diVigal and Gregg Edwards. Results of an eye-tracking study of online news reading behavior.

Patents

USPTO 4,974,173, Stampsheets: small-scale workspace representations indicating activity by other users, with Bobrow D., Foster G., Lanning S., and Stefik M. (December 1987)

Popular Press

When People Don't Listen. Glamour Magazine, March, 1997.

Professional and Teaching Experience

Virginia Tech Associate Professor August 2003-Present

CS1124. Introduction to Media Computation. An introduction to computing through manipulating media, intended to increase diversity in computing.

CS1614. Introduction to Living in the Knowledge Society. A freshman introduction to computing concepts as they appear in society, for non-majors.

CS 6724. Designing Coordinated Activities. This new graduate course allows students to learn about theories of coordination and the design and implementation of coordinated activities.

CS 5984. Research Methods for Applied Inquiry about Humans. This new graduate course is designed to give graduate student in computer science exposure to values, principles and pitfalls in various social science research methods.

CS 4984. Designing Tuple-Based Cooperative Activities for Learning. This new project-based class allows undergraduates to learn about the design and implementation of coordinated learning activities using Tuple spaces and handhelds.

CS 3604. Professionalism in Computer Science. In this writing intensive class, students learn how to make and analyze ethical and persuasive arguments, as well as the typical expectations potential employers have for new employees. In Spring, 2009, students conduct joint projects with students at the University of Limerick in Ireland. In Fall, 2005, I introduced a classroom response system that allowed students to contribute anonymous text messages to a common workspace as a way of finding out more about student thought and opinions.

CS 5734. Computer-Supported Cooperative Work. Graduate students learn how to create and analyze applications for multiple people. Pervasive and ubiquitous as well as small group applications and methods are examined.

CS 5724. Models, Theories and Frameworks of Human-Computer Interaction. (Graduate)

SRI International *Cognitive Scientist* *May 2000-August 2003*

Center for Technology in Learning. Participated in winning four NSF grants as co-PI or Senior Personnel. Research on Online Communities for Learning; handheld, wireless computers for mathematics education and for formative assessment; rigorous experimentation in classroom settings.

Stanford Poynter Project *Research Associate* *Sept.1998-April 2000*

Investigated the processes of reading newspapers on the World Wide Web, in conjunction with the development of novel software for interpreting eye-tracking data. With Professor Marion Lewenstein, Department of Communication, Stanford University.

Shyness Clinic *Research Co-therapist* *May 1998-Dec. 1998*

Co-therapist in a 26-session cognitive-behavioral shyness/social phobia treatment group. With Lynne Henderson, Ph. D., Head of the Shyness Clinic.

NSF Web Security Project *Consultant* *Sept.1998- April 2000*

Investigated people's attitudes towards security on the World Wide Web. With Dr. Batya Friedman, Department of Computer Science, Colby College.

Stanford University *Lecturer* *June 1998 - August 1998*

Taught Introduction to Social Psychology.

Stanford University *Lecturer* *April 1998 - June 1998*

Taught undergraduate seminar on Language and Deception.

Stanford University *Research Assistant* *Sept.1996- June 1997*

Investigated the effects of different screen sizes and viewed contents on recipient physiology (heart rate and skin conductance) and reported reaction. With Byron Reeves, Department of Communication.

Stanford University Teaching Assistant *Sept.1991 - June 1995*

Introductory Psychology, Introductory Statistics, Social Psychology (Head TA), Psycholinguistics (lectured on Memory for Discourse and Representation in Spatial Models) and Cognitive Psychology (lectured on

M.I.T. *Cambridge, MA*
Taught the Logo programming language to high school students at the Cotting School for the Handicapped. Taught a Logo course to secretaries in the Laboratory for Computer Science. Programmed an experimental language.

**Centre Mondiale pour
L'Informatique et
Resources Humaine** *Consultant* *July 1982 - Aug.1982
Paris, France*
Taught the Scheme programming language.

Logo Group, M.I.T. *Administrative Assistant* *June 1981 - Feb.1983
Cambridge, MA*
Ran an information center on the Logo computer language.

Terrapin Inc. *Consultant* *Sept.1981 - Jan.1982
Cambridge, MA*
Wrote an instruction booklet for the Terrapin Turtle running under Basic, and co-authored a manual on the Logo programming language.

**Jamaica Plains Veterans
Administration Hospital** *Research Assistant* *June 1978 - Nov.1978
Boston, MA*
Administered diagnostic tests to patients with brain lesions and worked on a study of retrograde amnesia in patients with alcoholism and Korsakoff's syndrome.

Professional and Service Activities At Virginia Tech

1. 2009-current, CS Undergraduate Program Committee
2. 2009-current, CS Diversity Committee
3. 2005-current, CS ABET Accreditation Process Chair. Spear-headed the development of a departmental self-improvement process consistent with ABET Accreditation Criteria, in which faculty reflect on their successes and failures every semester and make targeted, documented plans for systematically trying and evaluating new strategies. Pioneered the gathering and use of student level learning data. Chairing committee that is producing the ABET Self-Study report and preparing for the committee visit in Fall, 2008.
4. 2005-current, CS Representative to the College of Engineering ABET committee.
5. 2007-2008, Department Head Search Committee
6. 2006-2008 Member, Undergraduate Program Committee, involved with rethinking the undergraduate program to include a redesigned introductory sequence, the introduction of tracks at least at the advisory level, and the planned introduction of a capstone course.
7. 2004-current, Faculty Advisor, Association for Women in Computing
8. 2005-current, Course Coordinator for CS3604, Professionalism in Computer Science, a key course in preparing our students for the workforce in general, and especially with respect to oral and written presentations. CS3604 bears a primary pedagogical responsibility for several program outcomes for the Computer Science, including

written and oral communication, knowledge of the ethics as understood in computer science, and preparation for life-long learning. During the course of the last three years, we have been working on addressing some the barriers to student progress in writing and argumentation and have progressively raised our standards.

9. 2004-2005, Member, Graduate Program Committee
10. 2005-2006, Member, Ad hoc committee on Computer Science Accreditation and Assessment
11. 2005, 2008, 2009 Lead, Human-Computer Interaction Qualifying Exams
12. 2004-2005, Departmental Search Committee for Senior Professor/Head of Center for Human-Computer Interaction
13. New Courses Developed: Over the past two years, I have created three novel courses: two undergraduate courses focusing on the design of parallel distributed systems that support complex coordinated activities and a graduate course that focused on qualitative and quantitative research methods for applied inquiry about humans.

Professional and Service Activities Outside Virginia Tech

Journal editorships

1. Editorial Board, Interactivity: The Journal of Interaction Design, MIT Press (under development).
2. Guest Editor, with W. Mackay, SigCHI bulletin, Special Issue on Video as a Research and Design Tool (October, 1989)

International research collaborations

1. DRG-NSF Early Career Workshops, 2001-2003. Meeting in Tubingen, Germany, October, 2001 and in Tampa Florida, 2003. This resulted in a publication with international collaborators.
2. Tuples Project International Workshop on Development, SRI International, June 2005, Student and faculty attendees from including Spain, Singapore, Taiwan, Chile, China, and Korea. This resulted directly in two publications with international collaborators.

Other international activities

1. Visiting team, VT College of Engineering-Technicale Universitat Darmstadt, June 28-July 2, 2004. Helped pave the way for joint proposals and the establishment of a joint Master's program between Mechanical Engineering departments at the two schools.

Professional service accomplishments

The ACM SigCHI conference on Human-Computer Interaction is generally considered to be the most important conference in the field of Human-Computer Interaction.

1. Associate Chair for Papers, ACM SigCHI Conference on Human-Computer Interaction, 2011
2. Associate Chair for Papers, ACM SigCHI Conference on Human-Computer Interaction, 2009
3. Co-Chair (with Tom Rodden), Doctoral Consortium, ACM SigCHI Conference on Human-Computer Interaction, 2007
4. Associate Chair for Papers, ACM SigCHI Conference on Human-Computer Interaction, 2007
5. Session Chair, ACM SigCHI Conference on Human-Computer Interaction, 2007, 2005
6. Co-Chair (with Steve Harrison), Workshops, ACM SigCHI Conference on Human-Computer Interaction, 2006 (Note: organized and ran 24 workshops)
7. Associate Chair for Paper, ACM SigCHI Conference on Human-Computer Interaction, 2005
8. Reviewer, ACM SigCHI Conference on Human-Computer Interaction, perennially since 2004 and sporadically before then.
9. Vice Chair, BayCHI, June-January 2003-2004
10. Review Panel, tutorial proposals for 1990 Conference on Computer Human Interaction.

The following were the second and third meetings of the bi-annual conference on

- Computer Supported Collaborative Work and the first two that produced proceedings.*
11. Proceedings Chair, Conference on Computer Supported Cooperative Work, 1988
 12. Proceedings Chair, Conference on Computer Supported Cooperative Work, 1990

Other Conference and Workshop and Committee Organizational Roles

13. Communication Committee, International Society of the Learning Sciences
14. Program Committee Member, International Society for Design and Children 2010
15. Senior Program Committee Member, WMUTE 2010
16. Senior Program Committee Member, International Conference on Computers in Education, ICCE 2008, Conference on CUMTEL & DIGITEL, Taiwan, October 27-31, 2008.
17. Review Board, WMUTE, IEEE Wireless Mobile Ubiquitous Technology in Education, 2008
18. Organizer, Stanford-Berkeley Social-Personality Talks, May 1996
19. Organizer, Stanford-Berkeley Cognitive Talks, April 1992
20. Treasurer, SigCHI Workshop on Video as a Research and Design Tool (January, 1989)

Journal Reviewing Activity includes:

21. ICT (International Journal of Creativity and Technology), Human Computer Interaction, IEEE Transactions on Learning, Journal of the Learning Sciences, Social Studies of Technology, IEEE Computer, Transactions on Computer-Human Information, Information Systems Research, International Journal of Man-Machine Studies, Transactions on Office Information Systems, Journal of Learning and Individual Differences

Proposal Reviewing Activity

22. NSF expert reviewer, 2004, 2005.
23. NSF proposal review panels, every year: 2003-2008.

Conference Reviewing Activity

24. Since 2000, I have regularly reviewed for the following conferences: Winter Conference on Text and Discourse, Computer-Human Interaction, Computer-Supported Collaborative Work, GROUP, American Educational Research Association, International Conference of the Learning Sciences, and Computer-Supported Collaborative Learning

Other Reviewing Activity

25. Book reviewer, 2005, Springer-Verlag.

Executive Boards

1. International Society of the Learning Sciences, 2007-current

Advisory Boards

1. SmartGraphs Staudt, C., Zucker, A., etc., Concord Consortium
2. The James J. Kaput Center for Research and Innovation in STEM Education

3. CATAALYST project. PI: Jeremy Roschelle. Co-PI: William Penuel. SRI International. Funded by the National Science Foundation.
4. ITR: Value Sensitive Design -- Integrating Values into the Design of Information and Computer Systems. PI: Batya Friedman; Co-PI Peter H.Kahn, Jr. University of Washington. Funded by the National Science Foundation.
5. Representation, Participation and Teaching in Connected Classrooms, P.I.: J. Kaput; Co-PI: S. Hegedus. Funded by the National Science Foundation.
6. IIS project, Digital Libraries Curriculum Development.
7. CRA ICLS NSF Cyberlearning Workshop Advisor, March 24-25, 2005.
8. American Library Association--University of Washington Information Technology Policy Symposium on Internet Credibility. April 11-13, 2005.
9. Mentor, Contextual and Organizational Issues in Human – Computer Interaction Stanford School of Engineering (MS&E430/CS247B), 2000-2003
10. Technical Advisory Board, Project Perseus, Harvard University, 1986-89.

Diversity Orientation

1. *Student Supervision*: The Department of Computer Science at Virginia Tech is less than 6% female and less than 5% African-American at the undergraduate level and only slightly better at the graduate level. By early 2009, in this context, 7/18 of the undergraduate projects I had supervised have been conducted by women, and 2/18 with African-Americans. I had also supervised two graduate women, one of whom won an IBM Fellowship and the other an NSF Graduate Student Fellowship. I also graduated another female African-American student in education. Both African-American women went on to prestigious post-docs at Pennsylvania State and University of Iowa.
2. *Association for Women in Computing (AWC)*: I have been the faculty advisor for the Association for Women in Computing (AWC) since 2004. This is not only a support group, but also raises money and runs the annual Women in Computing Day, which brings about 100 local 8th grade girls and their teachers in to visit the Computer Science department. Additionally, the AWC raises money to send undergraduate and graduate women in Computer Science to the Grace Hopper Celebration of Diversity each year, often sending 12 to 14. Last, the women in the AWC write their own grants and engage in other outreach efforts to high school, entering and freshmen women.
3. *Research Orientation*: My research is oriented towards diversity and equity in several ways. My students study the roles of socio-economic standing and ethnic matching on the effects of the SimCalc educational intervention. SimCalc is itself designed to reduce inequity. The distributed technologies that I have been working on are designed to promote equitable participation and human-valued interaction. The design techniques that I have been advocating premit diverse values and value on diversity.

Professional Affiliations

American Psychological Society
Society for Text and Discourse

Society for Interpersonal Psychology and Theory
ACM SigCHI
International Society of Learning Sciences
American Educational Research Association