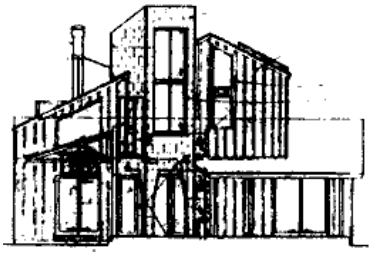
Steve Harrison, AIA



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PROFESSIONAL EXPERIENCE:

Virginia Polytechnic Institute and State University, Blacksburg, VA
1. Associate Professor of Practice, Computer Science and School of Visual Arts
Fall 2003-present
Conducting research on communicative surfaces and other HCI topics; developing program of design concerns to improve engineering teaching and research.
2. Director, Human-Centered Design Program, Interdisciplinary Graduate Education Program, Graduate School *Sp 2015-present*
Administering HCD certificate program, organizing HCD faculty, coordinating HCD-relevant classes, and leading HCD iGEP recruiting and admissions.
3. co-Director, Social Informatics Area, Center for Human-Computer Interaction, Institute for Creativity, Arts, and Technology *Sp 2015-present*
Lead Social Informatics area (consisting of faculty from 6 different departments across 3 different colleges) in developing mutually interesting projects. The primary focus of the group is on next wave human-computer interaction.

Aarhus Universitet, Aarhus, Denmark
Visiting faculty, Participatory IT Area: Department of Aesthetics and Communication and Department of Computer Science *Fall 2013*
Sabbatical visit working with computer engineers, scientists, and artists on design education methods, theories of urban phenomenologies with respect to digital facades, and blended interaction spaces.

University of California, Berkeley, CA
Lecturer, CS 298-12, "Design Realization" *Fall 2002*
Teaching a graduate class in design of interactive devices. Takes students through -- and beyond -- HCI methods to understand design in larger context. Emphasizes teamwork, innovation, and iteration.

eXFR Partnership / theREDshift, Portola Valley, CA
Founder, Partner and Treasurer *2002-2003*
Founder of two start-ups to provide design-based research services to industrial and academic R&D.

Xerox Palo Alto Research Center, Palo Alto, CA

Member of the Research Staff II *1985-2002*

Studied the practice of design, built new experimental tools for distributed designers, and created new design-based research paradigms. This work has been carried out in various Laboratories at PARC:

- **Research in Exploratory Documents.** The overall project of RED was the creation of new genres arising from new media and new combinations of media. I carried this out in a number of projects: investigating the future of reading, creating exhibits and co-managing RED-wide project to build exhibits for Tech Museum of Innovation; created the DrawStream Station creating 2 new genres, AVC's and video cocktail napkins; carried out study of design pedagogy with School of Architecture and Planning at MIT; invented a "studio" model for research; managed the PARC Artist In Residence Program ("PAIR").

- **Information Sciences and Technology Laboratory.** Created collaborative tools to support meetings; studied and improved PARC's internal intellectual property processes; and conducted controlled experimental study of product designers' social and cognitive activities.

- **System Sciences Laboratory.** Created new collaborative shared drawing tools for designers; carried out ethnographically-informed studies of product designers using Media Space.

- **Systems Concepts Laboratory.** Invented, developed and used the audio/video/computing design environment (the "Media Space") to explore the effects of various media on the social process of design. This term is now industry-standard term generically applied to electronically extended physical spaces. Carried out case studies of industrial and architectural design.

Skidmore, Owings & Merrill, San Francisco

Information Systems Manager *1974-1985*

As manager, responsible for all CAD system and data processing operations, programming and analysis, hardware and software selection and maintenance, personnel, data communications, and budget control in a multi-site/multi-CPU environment. Operation provided service for all West Coast Offices (450 Employees) of international architectural firm. Includes largest CAD project undertaken by SOM (at that time). Built up department to 12 employees.

As system designer and developer, proposed CAD system migration strategy from timesharing to networked workstation environment that was adopted by entire firm; designed and wrote data base systems for architectural design, land use planning, transportation and housing, inventory, and office management; wrote and implemented conversion to an on-line interactive accounting and job costing system from a batch-oriented one; and initiated integrated office automation system.

EDUCATION:

Master of Architecture, University of California, Berkeley *1977-1978*

B. A. University of California, Berkeley major: Architecture *1969-1973*

PROFESSIONAL REGISTRATION:

Architect, California Registration (# C 30329)

TEACHING EXPERIENCE:

CS 1124, "Media Computation" *Sp 2013, F+ Sp, '08, '07*
Department of Computer Science, Virginia Tech

EngE 1104, "Digital Futures / Computational Thinking Module" *Spring, 2010, F+Sp 09*
Department of Engineering Education, Virginia Tech

CS 3724, "Introduction to HCI" *Spring, 2004*
Department of Computer Science, Virginia Tech

CS 4634, "Design of Information" *F 2015, '14, '12, '11, '10, '08, '07, '06, '04*
Department of Computer Science, Virginia Tech

CS 4644/Art 4534, "Creative Computing Studio" *Spring, 2015, '14, '12, '11, '10*
Department of Computer Science and School of Visual Arts, Virginia Tech

CS 4784/CS 6724, "Integrating Computational Thinking into Middle School Curriculum, a participatory design approach" (HCI Capstone+SE seminar) *Sp, 2013, F '12*
Department of Computer Science, Virginia Tech

CS 4984/CS 6724, "Integrating Computational Thinking into Middle School Curriculum, a participatory design approach" *Spring, 2012*
Department of Computer Science, Virginia Tech

CS/Art 4984, "CyberArt" *Fall, 2007, '06*
Departments of Computer Science, Art, Music, and Communications Virginia Tech *F+Sp, 04-05, 05-06*

CS 5724, "Models, Theories and Methods of HCI" *Fall, 2015, '14, '11, '09*
Department of Computer Science, Virginia Tech

CS 5944, "Graduate Seminar" *Sp, '15, F '14, '12, '11*

Department of Computer Science, Virginia Tech

CS 5984, "Human-Centered Design of Computer Interfaces" *Spring, 2015*
Department of Computer Science, Virginia Tech

CS 5984, "Creative Realization of HCI devices" *Spring, 2007*
Department of Computer Science, Virginia Tech

IDS 5984, IDS 4984 "Design Realization: Interactive Museum Exhibits" *Fall, 2005*
Departments of Industrial Design and Computer Science, Virginia Tech

CS 5984, "Design of Interactive Systems" *Spring, 2004*
Department of Computer Science, Virginia Tech

CS 6724 "Media Space Seminar" *Spring, 2008*
Department of Computer Science, Virginia Tech

CS 294-12, "Design Realization" *Fall, 2002*
Department of Engineering and Computer Science, UC Berkeley

Arch 139, "Computer Applications in Architecture" *Spring 1984*
Department of Architecture, UC Berkeley

STUDENTS ADVISED:

PhD AWARDED:

Haeyong Chung (March 2015, committee) "Designing Display Ecologies for Visual Analysis"

Stacy Branham (February, 2014) "Designing Technologies for Empathic Communication"

Joon Sook Lee (December 2012, committee) "Who Goes Next?"

Shaimaa Lazem (June 2012, committee) "Systems of Coordination in Multi Party Networks"

Rongrong Wang (June 2012, committee) "Contextualizing Remote Touch for Affect Conveyance"

Tejinder Judge (August 2011) "Patterns of Domestic Video Mediated Communication"

Meg Kurdziolek (June 2011, committee) "Classroom resources and impact on learning"

Laurian Vega (May, 2011) "Security in Practice: Examining the Collaborative Management of Sensitive Information in Childcare Centers and Physicians' Offices"

Shahtab Wahid (January 2011, committee) "Facilitating Design Knowledge Reuse Through Relationships"

Fran Olivera (September 2010, committee) "Enabling the Blind to See Gestures"

Manas Tungare (March 2009, committee) "Mental Workload in Personal Information Management: Understanding PIM Practices Across Multiple Devices"

Kibum Kim (May 2008, committee) "Effect of Handhelds on Overhears in Triadic Conversations"

PhD ADVISEES IN PROGRESS:

Anamary Leal (Expected Summer 2016)

Michael Stewart (expected Dec 2016, committee) TBD

Ditte Amund Basballe (expected May 2015, outside committee member, Aarhus University, Denmark) "Evaluating Interactive, Site-Specific Art: Three Case Studies" (tentative title)

Mahdi Nabiyouni (2016, committee) TBD

Shuo Niu (2017, committee) TBD

Javier Tibau (2018 co-Advisor) TBD

Deba Saha/ECE (2018, committee) TBD

Navid Fallah/iPhD (2018. Committee) TBD

MS AWARDED:

Daniel Tilden (May 2013, committee) "Design and Evaluation of a Web-Based Programming Tool to Improve the Introductory Computer Science Experience"

Michael Stewart (Dec 2012) "How Private is Private?: Effects of Degree of Information Sharing on Group Ideation"

Robert Beaton (May 2012, committee) "On Digital Drumming: Collaborative, Dyadic, Co-Located, Coordinated Interaction"

Nouf Alaloula (May 2010, committee) "Framing Coordination in Collocated Computer-Mediated Communication"

Ricardo Quintana-Castillo (March 2010, committee)

Matthew Schaefer (June 2009, committee) "On PlaceMark: Collaborative Authoring, Place, and Identity"

Rob Hardy (May 2009), "Cheating in Multiplayer Video Games"

Caleb Jones (June 2008), "Virtual Community Orientation Project"

Kunmi Otitoju (April 2007), "Man in the Mirror: A Mythology-Driven Exploration of Multiple User-Interpretations in a Multimedia Space"

Justin Belcher (May 2007), "Embodied Interfaces for Interactive Percussion Instruction"

Miten Sampat (December 2007, committee), "Enabling Locative Experiences"

MS ADVISEES IN PROGRESS:

Chris Frisina (expected Dec 2016, committee) "FractionalDrumming: Integrated Remedial Fractions Learning Through Rythmn"

Shiwani Dewal (2016 co-Advisor) TBD

Ayshwarya Saktheeswaran (2016 Advisor) TBD

Ashima Athri (2016, committee) TBD

Prerana Rane (2016, committee) TBD

Kristen Hines/ECE (2016, committee) TBD

Sara (Grace) Fields (2016, committee) TBD

UNDERGRADUATES ADVISED:

Petey Mainardi (Summer, 2014 REU; Spring 2015) "CE21 – Middle School Computational Thinking"

Adrienne Williams (Fall 2014 REU) "CE21 – Middle School Computational Thinking"

Meredith McGlynn (Fall 2014 REU) "CE21 – Middle School Computational Thinking"

Alex Heivilin (Fall 2014 REU) "CE21 – Middle School Computational Thinking"

Adam Barnes (Summer 2014 REU; Fall 2014 REU) "CE21 – Middle School Computational Thinking"

Joe Bruzek (Summer 2014 REU) "CE21 – Middle School Computational Thinking"

Micah Fulton (Spring, 2013) Independent research "Real World Software Design"

Taylor O'Connor (Spring, 2013) Independent research "Sound of Fractions"

Clarrisa Stiles (Fall, 2011) Scienceneering Program

John Krulick (Spring, 2011) Independent research "Design Game. Comparing Privacy and Collaboration"

Aubrey Baker (Summer 2010) REU student

Jeffrey Brabant (Fall, 2009 & Spring, 2010) Independent research "Studying the Feasibility of Wiimotes as Classroom Feedback devices"

Robert Lewis (Fall, 2007 & Spring, 2008) Independent research "CS Departmental Hallway Display"

Chloe Fan (Summer, 2007) REU student

PUBLICATIONS:

BOOK (2):

1. Neustaedter, C., **Harrison, S.** Sellen, A., eds (2012). *Connecting Families: The Impact of New Communication Technologies on Domestic Life*. London: Springer CSCW book series.

2. **Harrison, S.** ed (2009). *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series.

BOOK CHAPTERS (20):

1. Yglesias, S., Tatar, D., **Harrison, S.** and Lee, J. S. (in press) Balancing Behaviors: A Design Phenomenology for Couples' Argumentation Via Different Media. In (S. Tettagh, Ed.) *Emotions and Technology*. Amsterdam: Elsevier.

2. McCrickard, D., Wahid, S., Branham, S. and **Harrison, S.** (2012). "Achieving Both Creativity and Rationale: Reuse in Design with Images and Claims" in Carroll, J. ed *Creativity and Rationale: Enhancing Human Experience by Design*. London: Springer Human-Computer Interaction book series. pp 105-120.

3. Neustaedter, C., **Harrison, S.** and Sellen, A. (2012). "Connecting Families: an Introduction" in Neustaedter, C., **Harrison, S.** and Sellen, A. eds *Connecting Families: The Impact of New Communication Technologies on Domestic Life*. London: Springer CSCW book series. pp 1-14

4. Judge, T., Neustaedter, C., and **Harrison, S.** (2012). "Inter-Family Messaging with Domestic Media Spaces" in Neustaedter, C., **Harrison, S.** and Sellen, A. eds *Connecting Families: The Impact of New Communication Technologies on Domestic Life*. London: Springer CSCW book series. pp 141-158.

5. Branham, S. and **Harrison, S.** (2012). "Designing for Co-located Couples" in Neustaedter, C., **Harrison, S.** and Sellen, A. eds *Connecting Families: The Impact of New Communication Technologies on Domestic Life*. London: Springer CSCW book series. pp 15-36.

6. **Harrison, S.,** and Tatar, D. (2012). "Design and the Third Paradigm" in Hartson, R., and Pyla, P. *UX Book: Process and Guidelines for Ensuring a Quality User Experience*. Morgan Kaufmann. 254-256

7. **Harrison, S.** (2009). "An Introduction to Media Space". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 1-8

8. **Harrison, S.** (2009). "A Brief History of Media Space Research and Mediated Life". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 9-16

9. Bly, S. and **Harrison, S.** (2009). "(Dis)Connecting Cultures: The Diary of a Short Lived Media Space". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 179-202

10. **Harrison, S.** (2009). "Section 2: The Space of Media Space". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 203-208

11. **Harrison, S.** (2009). "Section 3: Communications". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 285-290

12. **Harrison, S.** (2009). "Section 4: Where Are We?". in **Harrison, S**. ed *Media Space: 20+ Years of Mediated Life*. London: Springer CSCW book series. pp 419-420

13. Cox C., **Harrison, S.**, Hoadley, C. (2008) "Applying the "Studio Model" to Learning Technology Design" in *Educating Learning Technology Designers Guiding and Inspiring Creators of Innovative Educational Tools* Digano, C. Goldman, S., and Cohorst. M. eds. New York and London: Taylor & Francis. pp 145-164.

14. **Harrison, S.** (2008) "Seeing the Hole in Space", *HCI Remixed*, Erickson, T. and MacDonald, D. eds. Cambridge, MIT Press, pp155-160.

15. **Harrison, S.** (2000) "The Place of the Artist." *Art and Innovation The Xerox PARC Artist-in-Residence Program*. (Harris, C. ed.) 1999. Cambridge, MIT Press. Pp 36-45.

16. Minneman, S., and **Harrison, S.,** (1998) "Negotiating Right Along: An Extended Case Study of the Social Activity of Engineering Design" *The Design Productivity Debate*, (Duffy, A.H.B. ed.) 1998, London, UK Springer-Verlag Ltd. pp 32-50.

17. **Harrison, S.,** Bly, S., Anderson, S., Minneman, S., (1997) "The Media Space" *Video-Mediated Communication*, (Finn, K., Sellen, A., & Wilbur, S. eds.) 1997, Mahwah, NJ Lawrence Erlbaum Associates pp 273-300.

18. **Harrison, S.,** and Minneman, S. (1996) "A Bike In Hand" *Analysing Design Activity*, (Cross, N., Christians, H., & Dorst, K. eds.) 1996, Chichester, UK, John Wiley & Sons pp 417-436.

19. Stults, R., **Harrison, S.,** and Minneman, S., (1989) "The Media Space — experience with video support of design activity." In: *Engineering Design and Manufacturing Management*, A.E. Samuel (Ed), Elsevier, Amsterdam; 1989. pp 164-176.

20. **Harrison, S.,** Minneman, S., and Stults, S., (1989) "Design Communications Workshops." In: *Engineering Design and Manufacturing Management*, (Samuel, A. ed.), Elsevier, Amsterdam. 1989. pp 175-195.

JOURNAL ARTICLES (5):

1. **Harrison, S.,** Sengers, P., Tatar, D. (2011). "Making Epistemological Trouble: Third-Paradigm HCI as Successor Science". in *Interacting with Computers*. Volume 23, Issue 5, September 2011, Pages 385-392, ISSN 0953-5438, http://www.sciencedirect.com/science/article/pii/S0953543811000300 London: Springer.

2. McCrickard, D. S., Wahid, S., Branham, S. B., **Harrison, S.** (2011) "Achieving both creativity and rationale: Reuse in design with images and claims." *Human Technology* 7 (1), May 2011.

3. Schaefer, M., Tatar, D., **Harrison, S.**, Crandell, A. (2008). "Using Place as Provocation: In situ collaborative narrative construction". *Journal of the Research Center for Educational Technology*, Spring 2008. http://www.rcetj.org/?type=art&id=87830&

4. **Harrison, S.** and Tatar, D. (2008). "Places: People, Events, Loci. The relation of semantic frames in the construction of place" *Journal of Computer Supported Cooperative Work*, Springer, vol 17, Number 2-3 April, 2008 pp 97-135

5. **Harrison, S.** (1993) "Computing and The Social Nature of Design." *ACADIA Quarterly*. University of Southern California, Los Angeles; vol 12, number 1, Winter 1993, pp10-18.

INVITED JOURNAL ARTICLES (1):

1. **Harrison, S.** (2013). "Parallel Universes of Teleconferencing". in *Electronic Journal of Communications*. Volume 23 Numbers 1 & 2, 2013, ISSN 0953-5438, http://www.cios.org/www/ejcmain.htm

REFEREED AND INVITED MAGAZINE ARTICLES (8):

1. **Harrison, S.,** (2015) "What are you reading?" *interactions* April-May 2015 issue. New York, ACM. 22, 3 (April 2015), 12-13. DOI=http://dx.doi.org/10.1145/2745695

2. **Harrison, S.** and Tatar, D. (2011). "On methods." *interactions* 18, 2 (March 2011), 10-11. ACM, New York, NY, http://doi.acm.org/10.1145/1925820.1925823

3. **Harrison, S.,** Minneman, S., Balsamo, A. (2001) "The How of XFR: eXperiments in the Future of Reading." *Interactions*. Vol 8, issue 3. New York: The Association for Computing Machinery. June 2001. pp 31-41.

4. **Harrison, S.,** Minneman, S., Back, M., Balsamo, A., Chow, M., Gold, R., Gorbet, M., MacDonald, D., (2001) "The What of XFR: eXperiments in the Future of

Reading." *Interactions*. Vol 8, issue 3. New York: The Association for Computing Machinery. June 2001. pp 21-30.

5. Back, M., Chow, M., Gold, R., Balsamo, A., Gorbet, M., **Harrison, S.**, MacDonald, D., and Minneman, S. (2001) "Designing Interactive Reading Experiences for a Museum Exhibition." *IEEE Computer Magazine*, Vol. 34, No. 1, January 2001, 1-8.

6. Back, M., Cohen, J., Gold, R., **Harrison, S.,** Minneman, S. (2000) "Page Detection Using Embedded Tags." Proceedings of the ACM Symposium on User Interface Software and Technology, *CHI Letters* Vol. 2, No. 2, ACM Press, November 2000, 159 - 160.

7. Bly, S., **Harrison, S.,** and Irwin, S. (1992) "Media Spaces: Bringing people together in a video, audio, and computing environment. " *Communications of the Association of Computing Machinery*, NY; vol. 36, no. 1, January 1993. 28-45.

8. **Harrison, S.** (1983) "Coordinating A/E/C CAD, Skidmore, Owings & Merrill's Approach." *Computer Graphics World*. vol. 6, San Francisco, no. 11, November 1983.

PEER REVIEWED CONFERENCE PAPERS (48):

1. Niu, S., McCrickard, S., **Harrison, S.** (2015) "Exploring Humanoid Factors of Robots through Transparent and Reflective Interactions" *Proceedings of the 2015 International Conference on Collaboration Technologies and Systems (CTS 2015)* Publication forthcoming June 01 - 05, 2015. Atlanta, Georgia

2. Lee, J., Branham, S., Tatar, D., and **Harrison, S**. (2012). "Processlessness: Staying Open to Interactional Possibilities". *In Proceedings of DIS 2012* (Newcastle-upon-Tyne, UK. June 11-15, 2012) ACM, New York, NY, USA, pp 78-81.

3. Branham, S., **Harrison, S**., and Hirsch, T. (2012). "Expanding the Design Space for Intimacy: Supporting Mutual Reflection for Local Partners". *In Proceedings of DIS 2012* (Newcastle-upon-Tyne, UK. June 11-15, 2012) ACM, New York, NY, USA, pp 220-223. Best Paper award.

4. Dickey-Kurdziolek, M., S., Tatar, D., and **Harrison, S**. (2012). "Framespaces: Framing of Frameworks". *In Proceedings of DIS 2012* (Newcastle-upon-Tyne, UK. June 11-15, 2012) ACM, New York, NY, USA, pp 278-287.

5. Lee, J. Tatar, D., and **Harrison, S**. (2012) "Micro-coordination: because we did not already learn everything we need to know about working with others in kindergarten". In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work* (CSCW '12). ACM, New York, NY, USA, 1135-1144. http://doi.acm.org/10.1145/2145204.2145372

6. Lazem, S., Gračanin, D., and **Harrison, S.** (2012) "Effects of context-sensitive delays on group dynamics in 3D virtual worlds". In *Proceedings of the ACM 2012 conference on Computer Supported Cooperative Work Companion* (CSCW '12). ACM, New York, NY, USA, 155-158. http://doi.acm.org/10.1145/2141512.2141566

7. Baker, A., Vega, L., DeHart, T., and **Harrison, S.** (2011) "Healthcare and security: understanding and evaluating the risks". In *Proceedings of the 2011th international conference on Ergonomics and health aspects of work with computers* (EHAWC'11), Michelle M. Robertson (Ed.). Springer-Verlag, Berlin, Heidelberg, 99-108

8. Judge, T. Neustaedter, C., **Steve Harrison**, Blose, A. (2011) "Family Portals: Connecting Families Through A Multifamily Media Space" In *Proceedings of the ACM Conference on Human Factors in Computing Systems* (Vancouver, BC, Canada, May 7-12, 2011).

9. Wahid, S., McCrickard, D.S., DeGol, J., Elias, N., **Harrison**, S. (2011) "Don't Drop It! Pick It Up and Storyboard" In *Proceedings of the ACM Conference on Human Factors in Computing Systems CHI 2012* (Vancouver, BC, Canada, May 7-12, 2011).

10. Neustaedter, C., Judge, T., **Harrison, S**., Sellen, A., Cao, X., Kirk, D., and Kaye, J. (2010) "Connecting families: new technologies, family communication, and the impact on domestic space." In *Proceedings of the 16th ACM international conference on supporting group work* (GROUP '10). ACM, New York, NY, USA, 363-366. http://doi.acm.org/10.1145/1880071.1880152

11. Way, T., Cassel, L., Pearson, K., Wolz, U., Tatar, D., & **Harrison, S.** (2010). "A Distributed Expertise Model for Teaching Computing Across Disciplines and Institutions." In *The 2010 International Conference on Frontiers in Education: Computer Science and Computer Engineering*. July 12-15, 2010, Las Vegas, Nevada, USA. CSREA Press 2010, ISBN 1-60132-143-0

12. Wahid, S., Branham, S., McCrickard, D.S., **Harrison, S.** (2010) "Investigating the Relationship Between Imagery and Rationale in Design" In *Proceedings of the Design of Interactive Systems (DIS 2010)*, Aarhus, Denmark, ACM, New York, NY, USA, 75-84. http://doi.acm.org/10.1145/1858171.1858187

13. Vega, L., Sun, Y-T., McCrickard, D.S., **Harrison, S.** (2010) "TIME: A Method for Detecting Dynamic Variances of Trust". In *the Proceedings of the 4th Workshop on Information Credibility on the Web*. (In conjunction with 19th World Wide Web Conference 2010 (Raleigh-Durham, NC April 26-30, 2010). ACM, New York, NY, USA, 43-50. http://doi.acm.org/10.1145/1772938.1772948

14. Beaton, B. **Harrison, S.**, Tatar, D. (2010) "Digital Drumming: A Study of co-located, highly coordinated, dyadic collaboration" In *Proceedings of the ACM Conference on Human Factors in Computing Systems* (CHI '10). ACM, New York, NY, USA, 1417-1426. http://doi.acm.org/10.1145/1753326.1753538

15. Judge, T., Neustaedter, C., Tang, A., **Harrison, S.** (2010). "Bridging the gap: moving from contextual analysis to design". In *Proceedings of the 28th of the international conference extended abstracts on Human factors in computing systems* (CHI EA '10). ACM, New York, NY, USA, 4497-4500. http://doi.acm.org/10.1145/1753846.1754183

16. Schaefer, M., Tatar, D., **Harrison, S** (2010). "Can CSCW Technologies Help Us Re-construct Places". In *Proceedings of the ACM Conference on Computer-Supported Cooperative Work; "CSCW Horizons"* (Savannah, GA, February 6-10, 2010).

17. Wahid, S., Branham, S., Cairco, L., McCrickard, D.S., **Harrison, S**. (2009) "Picking Up Artifacts: Storyboarding as a Gateway to Reuse." In *Proceedings of the IFIP TC.13 Conference on Human-Computer Interaction (INTERACT '09)*, Uppsala Sweden, August 2009, pp 528-541.

18. Schaefer, M., Tatar, D., **Harrison, S** (2009). "Reflecting in Context: Collaborative Writing in Place". In *Computers and Writing Workshop 2009;* (Davis, CA, June 16-18, 2009).

19. Otitoju, K. and **Harrison, S.** (2008) "Understanding User-Expectations using Ambiguity" *UPA Europe 2008*, Torino, Italy December 3-6, 2008

20. Pérez-Quiñones, M., Tungare, M., Pyla, P., **Harrison, S.**, (2008) "Personal Information Ecosystems: Design Concerns for Net-Enabled Devices," *Latin American Web Conference, 2008. LA-WEB '08.*, pp.3-11, 28-30 Oct. 2008 URL: http://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=4756156&isnumber=4756147

21. Kim, K., Tatar, D., and **Harrison, S.** (2008). "Common ground can be efficiently achieved by capturing a screenshot in handheld-based learning activity". In *Proceedings of the 8th international conference on International conference for the learning sciences - Volume 3* (ICLS'08), Vol. 3. International Society of the Learning Sciences 57-58.

22. Otitoju, K., **Harrison, S.** (2008) "Interaction as Component of Meaning-Making" *Proceedings of DIS 2008,* Cape Town, South Africa, March 2008. http://doi.acm.org/10.1145/1394445.1394466

23. **Harrison, S.** Tatar, D. and Sengers, P. (2007) "The Three Paradigms of HCI", *Proceedings of CHI 2007*, alt.chi, San Jose, CA, May 2007.

24. Kim, K., Tatar, D., and **Harrison, S.** (2007). "Sharing visual context to facilitate late overhearer's understanding of the handheld-based learning activity." In *Proceedings of the 8th international conference on Computer Supported Collaborative Learning* (CSCL'07), Clark A. Chinn, Gijsbert Erkens, and Sadhana Puntambekar (Eds.). International Society of the Learning Sciences 367-369.

25. Kim, K., Tatar, D. and **Harrison, S.** (2008) "Sharing Visual Context to Facilitate Late Overhearers' Understanding of the Handheld-Based Learning Activity", *Conference on Computer-Supported Collaborative Learning*

26. Kim, K., Tatar, D. and **Harrison, S.** (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.

27. Lin, S., Tatar, D., **Harrison, S.**, Roschelle, J. & Patton, C. (2006) "Learning When Less is More: 'Bootstrapping' Undergraduate Programmers as Coordination Designers." *Participatory Design Conference*, Trento Italy, August 1-5, 2006.

28. **Harrison, S.** Back, M., Tatar, D. (2006) "'It's Just a Method': A Pedagogical Experiment In Interdisciplinary Design" *Proceedings of DIS 2006,* Penn State University, ACM Press, June 2006.

29. **Harrison, S.** and Tatar, D. (2006) "More Than a Method" *Proceedings of HICEd2006 –1 Inventivity: Teaching Theory, Design and Innovation in HCI* 2006 Limerick, Ireland, March, 2006.

30. Tungare, M., Pyla, P., Bafna, P., Glina, V., Zheng, W., Yu, X., Balli, U., **Harrison, S.** (2006) "Embodied Data Objects: Tangible Interfaces to Information Appliances" *Procedings of 44th ACM Southeast Conference*, Melbourne, FL, March, 2006.

31. **Harrison, S.** and Tatar, D. (2005) "The Anywhere Museum: Genres of Teachable Moments" poster at *New Paradigms for Using Computers*, IBM Alamden Research Center, San Jose, CA, July, 2005.

32. **Harrison, S.** and Back, M. (2005) "'It's Just a Method': A Pedagogical Experiment In Interdisciplinary Design" *Proceedings of CHI 2005*, alt.chi, Portland, OR, April 2005.

33. De Guzman, E, Back, M., **Harrison, S.,** Ho-Ching, W., Matthews, T., Rattenbury, T. (2003) "EEWWW! Tangible Interfaces for Navigating Inside the Human Body." *Proceedings of CHI 2003, Short Papers*, Ft. Lauderdale, FL, ACM Press, April 2003.

34. McKelvin, M, Back, M, **Harrison, S.,** Nestande, R., Valdez, L., and Yee, K. (2003) "SeismoSpin: An Interactive Instrument for Seismic Data." *Proceedings of CHI 2003*, *Short Papers*, Ft. Lauderdale, FL, ACM Press, April 2003.

35. Back, M. and **Harrison, S.** (2003) "The Roads Not Taken: detours and dead ends on the design path of Speeder Reader." *Proceedings of DIS '02*, ACM Press, June 2002. London.

36. Back, M., Cohen, J., Gold, R., Gorbet, M., **Harrison, S.**, Minneman, S. (2001) "Speeder Reader: An Experiment in the Future of Reading." *Proceedings of SIGGRAPH 2001*, ACM Press, August 2001.

37. Back, M., Cohen, J., Gold, R., **Harrison, S.,** Minneman, S. (2001) "Listen Reader: an electronically augmented paper-based book." *Proceedings of CHI 2001*, ACM Press, April 2001.

38. Balsamo, A., Gorbet, M., **Harrison, S.**, Minneman, S. (2000) "The Methods of Our Madness: Research on Experimental Documents." *Proceedings of ACM CHI 2000*. Reading, MA: Addison-Wesley.

39. **Harrison, S.,** Minneman, S., Marinacci, J. (1999) "The DrawStream Station or the AVC's of Video Cocktail Napkins." *The Proceedings of the International Conference on Multimedia Systems '99*. June, 1999, Firenza, Italy, IEEE Press. http://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=779259&isnumber=16911

40. Minneman, s. and **Harrison, S.** (1999) "The DrawStream station: a tool for distributed and asynchronous chats about sketches and artifacts." In *Proceedings of the HCI International '99 (the 8th International Conference on Human-Computer Interaction) on Human-Computer Interaction: Communication, Cooperation, and Application Design-Volume 2 - Volume 2*, Hans-Jörg Bullinger and Jürgen Ziegler (Eds.), Vol. 2. L. Erlbaum Associates Inc., Hillsdale, NJ, USA, 221-225.

41. **Harrison, S.,** and Minneman, S. (1996) "Space, Timestreams, and Architecture. Design in the Age of Digital Video." *Proceedings of the Design Team of the Future Conference*, December 4, 1996. Cambridge, MA: MIT Series on Technology and the Corporation.

42. **Harrison, S.** and Dourish, P., (1996) "Re-Placing Space: The Roles of Place and Space in Collaborative Systems." *Proceedings of ACM CSCW 96*. November 18-21, 1996. Reading, MA: Addison-Wesley pp 67-76.

43. Moran, T., Chiu, P., **Harrison, S.**, Kurtenbach, G., Minneman, S., and van Melle, W., (1996) "Evolutionary Engagement in an Ongoing Collaborative Work Process: A Case Study." *Proceedings of ACM CSCW 96*. November 17-20, 1996. Reading, MA: Addison-Wesley pp 150-159.

44. Minneman, S., **Harrison, S.**, Janssen, W., Kurtenbach, G., Moran, T., and Smith, I. (1995) "A confederation of tools for capturing and accessing collaborative activity. "*Proceedings of ACM Multimedia 95*, November 5-9, 1995. Reading, MA: Addison-Wesley, pp 523-534. [Selected as Best Paper at Conference]

45. **Harrison, S.,** and Minneman, S. (1995) "Studying Collaborative Design to Build Design Tools." *The Global Design Studio. Proceedings of the Sixth International Conference on Computer-Aided Architectural Design*, September 24-26, 1995. Center for Advanced Studies in Architecture, National University of Singapore. pp 687-698.

46. Minneman, S. and **Harrison, S.** (1993) "Where Were We: making and using near-synchronous, pre-narrative video." *Proceedings of ACM Multimedia 93*, August 1-6, 1993. c/o ACM, NY. pp 207-214.

47. **Harrison, S.** (1993) "Design Tools for the Communications Decade. " *Proceedings of Architecture & Creativity: the Impact of New Design Tools*. American Institute of Architects, Washington, DC, June, 1993.

OTHER PUBLICATIONS (8):

1. **Harrison, S.,** and Minneman, S. (1992) "Tools, Communication, and the Nature of Design." Xerox Corporation, Palo Alto. January 1992.

2. **Harrison, S.**, Minneman, S., and Irwin, S. (1992) "Graspable Implications: a study of 3-D objects in remote collaboration." Xerox Corporation, Palo Alto. January 1992.

3. **Harrison, S.** The (1991) "View from the Media Space: People, Events, Places." Xerox Corporation, Palo Alto. October 1991.

4. **Harrison, S.,** Minneman, S., Stults, R., and Weber, K. (1989) "VIDEO: a design medium." *SigCHI Bulletin*. Association for Computing Machinery/CHI, New York; October 1989.

5. **Harrison, S.,** and Minneman, S., (1989) "The Media Space: an Electronic Setting for Design." Xerox Corporation, Palo Alto. October 1989.

6. Weber, K., **Harrison, S.,** Minneman, S., and Stults, R. (1989) "Office Design Project." In: *SigCHI Video Review*. Association for Computing Machinery/CHI, New York, vol. 21, number 2, May 1989.

7. **Harrison, S.** (1987) "Shoptalk 3: Design and Media Spaces." (videotape) Xerox Corporation, Palo Alto. 1987.

8. **Harrison, S.,** and Stults, S. (1986) "Shoptalk 2: Two Views of a Conversation." (videotape) Xerox Corporation, Palo Alto. 1986.

WORKSHOPS AND PANELS ORGANIZED (7):

1. …. (2016) "PSI: What Comes Next?" Human-Centered Design program (Graduate School, VT) and Social Informatics Area (Center for Human-Computer Interaction, ICAT, VT).

2. Branham, S., **Harrison, S.**, Tatar, D. Nathan, L., Thelme, L. (2012) "Co-Creating & Identity Making in CSCW: Revisiting Ethics in Design and Research". In Proceedings of CSCW 2014. Baltimore, MD.

3. Dalsgaard, P., Halskov, K., and **Harrison, S.** (2012) "Supporting Reflection in and on Design Processes". In Proceedings of DIS 2012. Newcastle, UK.

4. McCrickard, S., Atwood, Curtis, G., **Harrison, S.**, Kolko, Stolterman, E., Wahid, S. (2010). "Artifacts in design: representation, ideation, and process". In *Proceedings of the 28th of the international conference extended abstracts on Human factors in computing systems* (CHI EA '10). ACM, New York, NY, USA, 4445-4448. http://doi.acm.org/10.1145/1753846.1754170

5. Neustaedter, C., Judge, T., **Harrison, S.**, Sellen, A., Cao, W., Kirk, C., Kaye, J. (2010). "Connecting families: new technologies, family communication, and the impact on domestic space". In *Proceedings of the 16th ACM international conference on Supporting group work* (GROUP '10). ACM, New York, NY, USA, 363-366. http://doi.acm.org/10.1145/1880071.1880152

6. Judge, T., Neustaedter, C., Tang, A., **Harrison, S.** (2010). "Bridging the gap: moving from contextual analysis to design". In *Proceedings of the 28th of the international conference extended abstracts on Human factors in computing systems* (CHI EA '10). ACM, New York, NY, USA, 4497-4500. http://doi.acm.org/10.1145/1753846.1754183

7. Baecker, R., **Harrison, S.**, Buxton, B., Poltrock, S., and Churchill, E. (2008). "Media spaces: past visions, current realities, future promise" In *CHI '08 Extended Abstracts on Human Factors in Computing Systems* (Florence, Italy, April 05 - 10, 2008). CHI '08. ACM, New York, NY, 2245-2248. http://doi.acm.org/10.1145/1358628.1358660 Video of panel available at http://dmcc.acm.org/pres/?query=/dmcc///confdata/chi2008/plenary/2008-04-08_11h32

8. Huh, J., Ackerman, M., Erickson, **Harrison, S.,** and Sengers, P. (2007). Beyond usability: taking social, situational, cultural, and other contextual factors into account. In *CHI '07 extended abstracts on Human factors in computing systems* (CHI EA '07). ACM, New York, NY, USA, 2113-2116. http://doi.acm.org/10.1145/1240866.1240961

INVITED TALKS (20):

1. "Human-Centered Design" ICAT Playdate, February 18, 2016

2. "The Structural Roots of Computational Thinking" Aarhus Universitet, Aarhus, Denmark, September 8, 2014

3. "Co-Design with School Teachers: Explorations in an Over-Constrained Setting" Mobile Life (KTH and Stockholm University) Stockholm, Sweden. November 13, 2013

4. "On Seeing" Aarhus Universitet, Aarhus, Denmark, November 8, 2013

5. "Sketching: Seeing Through Doing" Aarhus Universitet, Aarhus, Denmark, October 7, 2013

6. Tatar, D. & **Harrison, S.**, "*Creating a Basis for Teaching Ethics to Computer Scientists"*, CPATH Meeting. Villanova University, PA. June 3, 2013.

7. **Harrison, S.** & Tatar, D. "*Multi-level Interlocking Collaborative Design"*, CPATH Meeting. Villanova University, PA. June 3, 2013.

8. "Media Spaces: Moving Between the Media of Connection and the Media of Memory" Kodak Research Center, Rochester, NY August 14, 2009

9. "Creative Computing or the Art of Innovation" Department of Computer Science Weekly Seminar, Virginia Tech, Blacksburg, VA February 20, 2009

10. "Art + Engineering = Innovation" Taubman Museum of Art, Roanoke, Virginia January 9, 2009

11. "Being Away from Being: Reflecting on 20+ years of Mediated Life " Nokia Research Center, Palo Alto, California, August 8, 2007

12. "Whatever Became of the Paperless Office" AIA / Minnesota 1994 Convention, November, 1994

13. "Design Tools for the Communications Decade" Stanford Design EXPErience, Stanford, California. March, 1994

14. "Architecture & Creativity: Design Tools for the Communications Decade" A/E/C Systems '93 (AIA Symposium), Anaheim, June 1993

15. "Design Tools for the Communications Decade" Design Education &Technology, Harvard/GSD, June, 1993

16. "Computing and the Social Nature of Design" AAAI Spring Symposium, Stanford University, March, 1993

17. "Media Space: the use of video as a design medium" National Symposium on Concurrent Engineering, Washington DC, June, 1992

18. "If Multimedia has arrived, where do we go from here?" Comdex Spring '92, Chicago, IL, May, 1992

19. "Design Communications" School of Engineering, UC Berkeley, July, 1991

20. "Talking about Talking: Design at a Distance" Pan Pacific Working Meeting, Illinois Institute of Technology, Chicago, Jul, 1990

21. "Video: a Design Medium" SigCHI Workshop: Video as a Research and Design Tool, MIT, March 1989

22. Keynote speaker, ITS Conference on CAD in US, Tokyo Japan, June 1984

REPORTS BY OTHERS OF MY WORK (27):

1. Neustaedter, Carman & Sengers, Phoebe. (2012). "Autobiographical Design in HCI Research: Designing and Learning through Use-It-Yourself". *In Proceedings of DIS 2012* (Newcastle-upon-Tyne, UK. June 11-15, 2012) ACM, New York, NY, USA, pp 514-523

2. Boyle, J., & Crandell, A. "The Hollins Community Project: New Media, Narrative, and Affective History" in *Wi: Journal of Mobile Media*, Spring, 2009 available at http://wi.hexagram.ca/?p=52

3. Kittredge, K. "An Exhibit You Can Touch" *The Roanoke Times*. February 7, 2009. p Extra 1.

4. Gaver, W. Closing Keynote *Designing Interactive Systems Conference* February, 2008. Cape Town, South Africa. (Featured "The Third Paradigm".)

5. --- http://bayosphere.com/node/763 (Report on "Anywhere Museum presentation at IBM Alamaden NPUC conference, July 2005.)

6. Hales, K. *Writing Machines*. MIT Press, Cambridge, 2002. pg 23.

7. --- "21 Designs for 2021" *Metropolis Magazine* Volume 20, Number 7 March, 2001.On line at http://www.metropolismag.com/html/designis/designis_71-75.html

8. Scanlon, J. "Watch Dog" *Wired* April, 2000. p 60

9. Nicholson, L. “How many ways can one red? California museum dares to ask” *The Philadelphia Enquirer*. May 11, 2000 pp F1-F6

10. Helfand, D. “Boldly Going Beyond the Printed Page.” *Los Angeles Times*. July 2, 2000. p B2

11. Thym, J. “An open book.” *The Fremont Argus*, 2000. pp Cue 1-Cue-4

12. Weise, E. “Reading, fundamentally rethought.” *USA Today* Feb 38, 2000. p 3D

13. Taylor, C. “Inventions 2000: Team Xerox.” *Time Magazine* Dec 4, 2000

14. Gold, R. “Xerox PARC at 30. Inside a Research Lab” *Dr. Dobb’s Journal*. Dec, 2000. pp 42-46.

15. Farmanfarmaian, R. “Beyond E-Books. Glimpses of the Future.” *Publishers Weekly*. Jan 1, 2001. pp 56-57.

16. "Big Red Room Divider” *Sunset Magazine* (for feature on remodeling of my house in Portola Valley) April, 1996.

17. -- "Western Home Awards for 1995: Carport" *Sunset Magazine* (for feature on remodeling of my house in Portola Valley) October 1995.

18. Netropolitan. *New Scientist*. Mar 4, 1995

19. Novitski, B. J. “Designing by Long Distance”. *Architecture* American Institute of Architects. c/o BPI Communications, NY; vol. 83, no. 2; February 1994. pp 117-119.

20. Olson, M., and Bly, S. The Portland Experience: a report on a distributed research group. *International Journal of Man-Machine Studies*. S. Greenberg (Ed) Academic Press, Harcourt Brace Jovanovich, London, vol. 34 no. 2; February 1991.

21. --- Lo Spazio Virtuale. *Technologia*. Xerox Corporation, Milan, no. 3, March 1990.

22. Stults, R. Experimental Uses of Video to Support Design. Xerox Corporation, Palo Alto. #SSL-89-19. 1989.

23. Weber, K., and Minneman, S. Office Design Project. (videotape) Xerox Corporation, Palo Alto. 1987.

24. --- On-Line to the Future. *USA Today*. June 8, 1987.

25. --- "Media Spaces at Xerox PARC". *Wall Street Journal Television*. Broadcast March 22, 1987.

26. Ferrell, J. They're Talking Face-to-face via Computers. In "Leading Edge", *San Francisco Examiner*. November 20, 1986.

27. Stults, R. *Media Space*. Xerox Corporation, Palo Alto. 1986.

OTHER PROFESSIONAL EXPERIENCE:

2016

Faculty Advisor, VT Game Project (student organization)	*2015-present*
Subcommitee Chair (Methods and Processes), DIS 2016	*June, 2016*
member, ACM Design of Interactive Systems (DIS) Advisory Board	*2015-present*
Associate chair (Design subcommittee), CHI 2016	*May, 2016*
Reviewer, DRS 2016	*June, 2016*

2015

Reviewer, CSCW 2015	*February, 2015*
Reviewer, CHI 2015	*April, 2015*
Faculty Advisor, VT Game Project (student organization)	*2015-present*

2014

Panelist, National Science Foundation	*2014*
Co-Chair, Design of Interactive Systems (DIS) 2014, Vancouver, BC, Canada	*June, 2014*
Reviewer, DRS 2014	*June, 2014*
Session chair, CHI 2014	*April, 2014*
Associate chair (Design subcommittee), CHI 2014	*April, 2014*
Workshop organizer, CSCW 2014, "*Ethics in Design Research*"	*February, 2014*
Reviewer, CSCW 2014	*February, 2014*

2013

Invited talk, "*Co-Design with School Teachers explorations in an over-constrained setting"*, Mobile Life (KTH, Stockholm University, Microsoft Research, IKEA, Nokia, and Ericsson Telephone), Stockholm Sweden	*Nov, 2013*
Invited talk, "*Sketching and doing"*, Participatory IT, Aarhus Universitet, Denmark	*Nov, 2013*
Invited talk, "*On Seeing: Seeing through doing"*, Participatory IT, Aarhus Universitet, Denmark	*Oct, 2013*
Invited talk, "*Media Space: People, Places, and Hands"*, Participatory IT Lab, Aarhus Universitet, Denmark	*Sep, 2013*
Advisory board, Participatory IT, Aarhus Universitet, Denmark	*Fall, 2013*
Outside evaluator, tenure and promotion, Carnegie Mellon University	*August, 2013*
Subcommittee chair (Design), CHI 2013	*April, 2013*
Session chair CHI 2013	*April, 2013*

Invited talk, "*HCI and creative computing"*, Sophomore Honors Seminar, Virginia Tech *Feb, 2013*
Reviewer, CSCW 2013 *February, 2013*

2012
Workshop organizer, DIS '12 "*Supporting Reflection in and on Design Processes"* *June, 2012*
Papers reviewer, DIS '12 *June, 2012*
Reviewer, National Science Foundation *2012*
Papers reviewer, CSCW '12 *February, 2012*
Subcommittee chair (Design), CHI 2012 *May, 2012*

2011
Outside evaluator, tenure and promotion, Simon Fraser University *November, 2011*
Session chair CHI 2011 *May, 2011*
Subcommittee chair (Design), CHI 2011 *May, 2011*

2010
Workshop organizer, GROUP 2010 "*Connecting Families: New Technologies, Family Communication, and the Impact on Domestic Space"* *Nov 7, 2010*
Manuscript reviewer, MIT Press *September, 2010*
Outside evaluator, tenure and promotion, Carnegie Mellon University *August, 2010*
Associate chair, ACM DIS '10 *August, 2010*
Workshop organizer, CHI 2010 "*Bridging The Gap: Moving From Contextual Analysis To Design*," *April 10, 2010*
"*Artifacts in Design: Representation, Ideation, and Process*" *April 11, 2010*
Session chair CHI '10 *April, 2010*
Associate chair, CHI '10 *April, 2010*
Journal article reviewer, *ToCHI* *February, 2010*
Papers reviewer, CSCW '10 *February, 2010*

2009
Reviewer, *International Journal of Web-Based Communities* *2009*
Reviewer, National Science Foundation *2009*
Reviewer, Icelandic Research Fund *2009*
Papers, Notes, and Best-Paper reviewer, CHI '09 *April, 2009*
Session chair CHI '09 *April, 2009*
Papers reviewer, INTERACT 2009 *March, 2009*

2008
Papers reviewer, UIST '08 *May, 2008*
Papers reviewer, UbiComp '08 *May, 2008*
Papers reviewer, CSCW '08 *May, 2008*
Reviewer, National Science Foundation *2008*
Papers, Notes, and Work-in-Progress reviewer, CHI '08 *April, 2008*
Panel organizer, "Media Space 20 Years On" CHI '08 *April, 2008*
Papers reviewer, DIS 2008 *March, 2008*

Session chair, DIS 2008 *March, 2008*

2007

Papers, Late-Breaking Results, and Design Expo reviewer, CHI '07 *April, 2007*
SIG co-organizer, "Beyond Usability" CHI '07 *April, 2007*

2006

Workshop organizer, CSCW 06, "*Media Space-Reflecting on 20 Years*" *Nov, 2006*
Session chair, DIS 2006 *June, 2006*
Papers reviewer, DIS 2006 *June, 2006*
Papers, Late-Breaking Results, and Design Expo reviewer, CHI 2006 *April, 2006*
Workshops co-Chair CHI 2006 *2005-2006*

2005

Advisory Board: LIFE Consortium, Stanford University *May, 2005*

2004

Papers, Late-Breaking Results, and Design Expo reviewer, CHI 2005 *Oct, 2004*
External PhD. dissertation reviewer, University of Queensland Australia *Apr, 2004*
Papers and Tech Notes reviewer, UIST 2004 *Apr, 2004*
Papers and Notes reviewer, CSCW 2004 *Apr, 2004*
Papers, Cases and Posters reviewer, DIS 2004 *Feb, 2004*

2003

Coach, Product Design Team *Spring 2003*
Stanford University
Papers and Late-Breaking News reviewer, CHI 2004 *Oct, 2003*

2002

Tutorial instructor, CSCW 2002, "*Visual Support for Conversation*" *Nov, 2002*
Paper reviewer, CHI 2003 *Oct, 2002*
Coach, Product Design Teams *2002-2003*
University of California (various classes, Mechanical Engineering and Hass School of Business) Berkeley, CA
Coach, Destination Imagination Design Team *2002-2003*
Corte Madera School, Portola Valley, CA
Treasurer, BayCHI *2002*
Board Member, Berkeley Institute of Design Advisory Panel *2002*
University of California, Berkeley

2001

Cub Scout Den Leader *2001-2003*

1998

Paper reviewer, CHI '98 *Oct, 1998*
Director, PARC Artist in Residence Program ("P.A.I.R.") *1998-2001*

1997

Guest Critic: Graduate Architectural Studio: "Daedalus" *Fall 1997*

Massachusetts Institute of Technology, Cambridge, MA

1996

Commissioner, Architectural Site Control Commission (design review) *1996-2003*
Town of Portola Valley, CA

Moderator / organizer, Participatory Design Conference '96, "*The Participatory Design of Work Space*" *Nov. 1996*

Video Reviewer, CSCW *June 1996*

Moderator: "*Architectured Sound, Urbanity, and Paranoid Space*" *April 1996*
SoundCulture, San Francisco, CA

1994

Committee member, General Plan Review Committee *1994-1996*
Town of Portola Valley, CA

1990

Workshop organizer, Participatory Design Conference '90, "*Design Communications Workshop*" *April 1990*

1989

Founding chair, Design Activities Study Group *1989-1996*
Xerox PARC

1988

Workshop organizer: "*The Media Space for Design*" *Nov. 1988*
International Workshop on Engineering Design and Manufacturing Management, University of Melbourne, Melbourne, Australia

Workshop organizer: "Design Communications Workshop" *Oct. 1988*
Design Division, Stanford University

1984

Lecturer: Arch 139, "*Computer Applications in Architecture*" *Spring 1984*
Department of Architecture, UCB

1983

Program guest, "*Architectural Modeling*" *June 1983*
Computer Chronicles, Produced for PBS by KCSM, San Mateo.

1979

Lecturer / course organizer: *March 1979*
"Computers in Architecture: Technology of SOM"
UC Extension, San Francisco, CA

AWARDS AND GRANTS:

NSF IIS-1132227 ($199,998) CE21 Planning Grant: Integrating Computational Thinking into Middle School Curriculum 10/01/2011-03/31/2013 (Co-PI)

NSF IIS-1018607 ($499,276) HCC-Small: Human micro-coordination in a world of pervasive computing: understanding emotional, personal, interpersonal and behavioral interconnections 9/1/2010-8/31/2013 (Co-PI)

CRA Computing Innovations Fellowship ($120,000) "Research Through Design: Exploring Distributed Communication between Users in Developed and Developing Countries". *Aug., 2010*
This funds a post-doc to explore how infrastructural and cultural differences affect communication, economic exchanges, and connectedness between African immigrants and individuals in their countries of origin. (PI)

Creative Achievement Award, College of Architecture and Urban Studies/Virginia Tech, "REVO/over" interactive art installation at the Taubman Museum of Art, February, 2009.

NSF IIS-0829625 ($119,951) "CPATH CB: Distributed Expertise in Enhancing Computing Education with Connections to the Arts" *Sep., 2008*
Pathways to Integrated Undergraduate Computing Education grant for the workshops to bring together educators in and out of computing at the middle levels of undergraduate education. (co-PI)

NSF CCF-0442469 ($40,001) "CPATH CB: Connecting Computing Educators within and outside the traditional boundaries" *Sep., 2007*
Pathways to Integrated Undergraduate Computing Education grant for the workshops to bring together computing educators who use innovative and engaging methods and topics. (co-PI)

Best Engineering Project, Virginia Tech Campus Research Symposium, "Embodied Data Objects: Tangible Interfaces to Information Appliances" March, 2006.

NSF ESI-0442469 ($75,000) "Planning "Inside Phoebe's Field"" *Jan, 2005*
Informal Science Education grant for the development and design of prototype traveling museum exhibition. (co-PI)

NSF CNS-0423611($242,067) "Towards Unbounded Display" *Aug, 2004*
CNS-CISE Research Resource grant for large displays for comparative HCI studies. (co-PI)

AIGA LOOP Student Design Award *2002*
CS294-12 (Berkeley Institute of Design Realization) three (of four) group projects. LOOP selects 15 student projects annually for recognition.

Gold Medal, I.D. magazine Interactive Design Review *June, 2001*
for the design of the ReadingWall in the "XFR: experiments in the Future of Reading" exhibition.

Silver Medal, I.D. magazine Interactive Design Review *June, 2001*
for the design of the ListenReader in the "XFR: experiments in the Future of Reading" exhibition.

Xerox Corporation, Internal Funding ($800,000) *June, 1999*
Design and development "XFR: experiments in the Future of Reading" exhibition to demonstrate new technologies and new genres of reading.

Western Home Award *October 1995*
Sunset Magazine / American Institute of Architects,
for carport addition to my house in Portola Valley. With James Goring (Goring & Straja, Architects)

PATENTS:

U.S. Patent: 6,515,690. *Feb. 4, 2003*
"Systems And Methods Providing An Interface For Navigating Dynamic Text"

U.S. Patent: 6,262,662. *Jul 17, 2001*
"Systems and Methods that Detect Proximity Information Using Electric Field Sensing Devices and a Page Identification using Embedded Identification Tags"

U.S. Patent: 6,239,801. *May 29, 2001*
"Method and System for Indexing and Controlling the Playback of Multimedia Documents"

U.S. Patent: 5,986,655. *Nov 16, 1999*
"Method and System for Indexing and Controlling the Playback of Multimedia Documents"

U.S. Patent: 5,717,879. *Feb 10, 1998*
"System for the Capture and Replay of Temporal Data Representing Collaborative Activities."

US Patent: 5,692,213 *Nov 25, 1997*
"Method for Controlling Real-Time Presentation of Audio/Visual Data on Computer System"

US Patent: 5,239,373 *Aug 24, 1993*
"Video Computational Shared Drawing Space"

US Patent: 4,987,492 *Jan 22, 1991*
"User interface control for communications system"

MUSEUM SHOWS:

"Study" *Nov, 09*

Architectural-scale display of Darwin's *On the Origin of the Species*; element in art installation for "Singing Darwin" at Virginia Tech Art Armory Gallery.

"Reach" *Nov, 08-Mar, 09*

Multimedia projection for inaugural show, *REVO/over*, at Taubman Museum of Art, Roanoke, VA *http://www.taubmanmuseum.org/*

"XFR: Experiments in the Future of Reading" *June-Nov, 2002*

Traveling exhibition at Liberty Science Center, Jersey City, NJ *http://www.astc.org/exhibitions/xfr/dxfr.htm*

"XFR: Experiments in the Future of Reading" *June-Oct, 2001*

Traveling exhibition at Arizona Science Center, Phoenix, AZ *http://www.astc.org/exhibitions/xfr/dxfr.htm*

"XFR: Experiments in the Future of Reading" *Mar-Sep, 2000*

Inaugural run at Tech Museum of Innovation, San Jose, CA *http://www2.parc.com/red/projects/xfr/*

"Space Between" *Fall 1997*

Interactive piece in conjunction with artist Will Tait. San Francisco Museum of Modern Art Rental Gallery, Ft. Mason, San Francisco, CA

PROJECTS:

Virginia Tech:

HCI Design Education 2.0. I am engaged in multiple activities in HCI Design education:

- building on work begun during a sabbatical at Aarhus University in Denmark (Fall 2013), I am investigating interactive HCI design tools using table-top and large displays. This work is part of my larger program to develop an innovative program of HCI design education.
- I am developing a theoretical frame for HCI design education, which I have provisionally termed, "meta-dexterous". Innovation stems from the combination or contrast between perspectives, concerns and goals. Where multi-dexterous design means working collaboratively across discipline boundaries, *meta-dexterous* design means working collaboratively across discipline boundaries, but better. We call this "meta" in that this higher-level deeply reflective dexterity shapes and orders the specific, subsidiary design and engineering dexterities.
- I am developing new HCI curriculum to enact the *meta-dexterous* theoretical frame. Part of this involves finding trans- and multi-disciplinary educational settings and institutions.

Technologies Of Urbanism. Coupling my previous work on architectural-scale display with the media façade research at Aarhus, I have begun an exploration into the theoretical aspects of mediated urban experience. This work is just beginning, but already I have created a preliminary typology of phenomenologies of mediated urban experience. Future collaborations with Aarhus University are expected.

Technologies Of Intimate Relationships. Explores the role of computer technologies in mediating human communication, empathic connection, and personal growth in the context of intimate partner relationships—what types of technologies should we design for couples, and what are the nuanced, meaningful ways in which technology can transform them? Our approach is human-centered and pragmatic; the method is to develop knowledge in conversation with participants and use technology prototypes in naturalistic settings. Themes of interest include: computer mediated communication, design, activism, respectful dialogue, mutual reflection, narrative identity, critical theory, qualitative methods, and ethics.

Microcoordination. Microcoordination research is concerned with the ways that interacting with computational systems imperceptibly alters our definitions of human interaction (for example how "friending" in Facebook changes our concepts of what it means to be a friend in real life). One component of the work continues to be the detection of behavioral changes. A new component focuses on the notion of designing for different kinds of mediated pressures. This work is summarized by foci on mediated relationships among couples, social attention, cheating and the question of who goes next in situations that involve people and machines.

Surfaces. The Surfaces Studio in ICAT will investigate interactive environments. Within the next ten years, almost any surface in the built environment could be an interactive display. At-hand information currently found in mobile devices will be at-hand in everyday objects and surfaces. It will shape the immediate surroundings. Space and objects themselves will become media not restricted to their function: toasters could be newspapers, walls might be graphic novels, and coffee tables might also be coffee table books. People will be able to "construct" shared places apart from the windows metaphor: I might walk along the a hallway in Torgersen with three friends, two of whom are virtually displayed with me even though one was sitting in her office and the other strolling on Ocean Beach in San Francisco. But display-everywhere is only half the story. The other half is ubiquitous interaction. Some of the possibilities are relatively simple. Perhaps, for instance, I will call the elevator with a button that, as in *Harold and the Purple Crayon*, I can just draw up. There will be enormous challenges to accomplish this vision; the structure of such interactive systems has yet to be defined, as do the relationships between mobile technology and the built environment, the nature of interaction, the idea of "place", and even the roles of windows, picture frames and signs.

Integrating Computational Thinking into the Middle School Curriculum. Computational thinking (CT) is a key enabler of effective participation in 21st century life. The project takes an Integrated Approach (IA), to build CT activities into current instructional practices across core middle school curriculum. We will locate nascent CT activities in the existing curriculum, reinforce and develop the overlap between the curricular area and the target CT area, and subsequently reinforce the CT content in a short, reinforcing instructional units.

Domestic Media Spaces. The original Media Space research I initiated at PARC focused on the workplace. Over the last decade, computing technologies rapidly changed the way families can communicate, coordinate, and connect with others through readily-available (and often free) applications, such as Google Talk, Skype, or iChat. The accessibility and proliferation of these applications means that family members are increasingly faced with new mechanisms to reach out and connect with their family and friends. For this reason, technology is now rapidly reconfiguring the way we think about and design for domestic spaces. As it does so, researchers now must directly confront issues of family relations and the subtle negotiations that are part of that realm. "Connection" can be emotionally expressive or merely informational. Analytic frameworks as well as technologies developed to support work may not be appropriate for understanding this setting.

Research Through Design: Exploring Distributed Communication between Users in Developed and Developing Countries. The project studies how infrastructural and cultural differences affect communication, economic exchanges, and connectedness between African immigrants and individuals in their countries of origin. This is investigated by developing and evaluating novel computational systems to support these new forms of interconnectedness. This research contributes to the development of a design intervention targeted at African immigrants, design principles that informs in-

teractive system design for this growing and understudied population and producing a case study documenting how to integrate design thinking into a human-computer interaction course.

Security and Trust in Practice. The project studies how trust, privacy, and negotiation affect the ad hoc practice of collaboratively managing sensitive personal information in childcares and medical practices.

Distributed Expertise to Enhance Computer Science Education Through Collaboration with the Arts. This project rethinks aspects of undergraduate CS education. Computing is essential for practically all other academic disciplines. Computers are pervasive today and many professionals develop basic programming skills as a way to express ideas, problems and solutions in computational terms within their own disciplines. It is common to find curricula in the arts -- music, graphical design, English -- with computational courses in their curriculum. This project seeks out, promotes and supports intersections among courses in the arts and computer science. With Villanova University and the Technical College of New Jersey.

CyberArts. As we learned in the PARC Artist-in-Residence Program ("PAIR"), collaboration between the arts and technology can be an exciting driver of innovation. At Virginia Tech, the CyberArts "Collaborative" brings together art, music, communications, computer science, and other disciplines. I have worked with faculty and administrators:

- defining programmatic options such a collaboration might pursue;
- describing immediate and future studios and other facilities;
- developing grant opportunities;
- teaching the pilot class.
- Chairing faculty search committee (CS/Animation and Graphics)

Anywhere Museum: the Place of Engineering. A project of the College of Engineering to connect communities within and outside of the College by making the public spaces "tell the story of engineering". Therefore, the spaces of the College should:

- present the story of the College as the evolving, vibrant, and innovative programs and departments that constitute it;
- support formal pedagogy by creating 'teachable moments";
- highlight points of connection across engineering disciplines;
- make engineering visible to students as they move between classes and labs;
- involve students in active participation in the creation of engineering culture.

The project has deep budget constraints and so requires leveraging opportunities as they arise. One project in development will annotate the outside of the very large campus wind tunnel with a laser projector illustrating air flow, outline models under test, formulas and calculations. Project Director.

Communicative Surfaces We are approaching the point when most any surface in the built environment or object in the environment can be a transformable display. At the same time MEMS, technology is making ubiquitous interaction possible. This work examines that situation from a number of approaches: how will the meaning of space

and place change? what new genres may arise? what should the system architecture be? what abstractions and ontologies make sense? One current activity is the development of a proposal for a gigapixel display consisting of an array of physically and logically reconfigurable high resolution LCD panels with the Virginia Tech Center for Human Computer Interaction.

Xerox PARC:

XFR: eXperiments in the Future of Reading -- an Exhibition at the Tech Museum of Innovation and a research project. Seen and used by 300,00 visitors, XFR is an interactive, entertaining and educational exhibition that explores the history of reading, the technologies of today's reading and a few experimental forays into the future of reading. It is intended to make the visitor aware of reading in its many forms, its expanding technologies, its methods and genres, and its promise. It dispels the concept that the digital age will make reading obsolete; it shows how new media creates new genres. The exhibition is composed of multiple independent exhibits, each exploring a different aspect of the message. I developed the overall appearance and layout as well as exhibits showing the history of reading and scanning technology. The visitor "reads" their way in and out without being conscious of it – the same way that we cannot help but read once we have learned how. *http://www.parc.xerox.com/xfr*

REDAEDALUS: The PARC/MIT Virtual Design Studio. During the Fall of 1998, I was one of the instructors in a graduate design studio in the School of Architecture and Planning at MIT. To assess the DrawStream Station, we (Scott Minneman and I) carried out "desk crits" from our lab and offices at PARC. A desk crit is the central pedagogical activity of architectural design education. Just as in a commercial practice, project heads and other experts review drawings, models, and computer renderings. This is more than a thumbs up/thumbs down kind of review; usually the criticism takes the form of design with the student. We uncovered two genres: asynchronous video conversations (self-contextualizing threaded multimedia conversations) and video cocktail napkins (recorded video fragments that are used as conversational props). Project leader.

PAIR: the PARC Artist in Residence Program. PAIR brought artists into PARC in order to spark intellectual inquiry and broaden the forms of legitimate industrial research. Begun by Rich Gold, I followed as the program's second director. Artists familiar with technology were paired with researchers with an interest in the arts; appropriate joint projects were developed. The goal was to create better artists and better researchers rather than art with more sophisticated technology or "prettier" new technology.

Design in the Age of Digital Video. In this project, digital video allowed people to simultaneously watch video recordings and make (or link in) new ones composed of their commentary and viewing reactions, creating threaded video conversations. It uses the TimeStream architecture (a.k.a. "Coral") to play recordings, make new recordings while watching others, and correlate the two. This was combined with the Vid-

eoDraw system to create a "DrawStream" station that permits users to make reference to objects and drawings on a shared work surface and to record, index and retrieve these discussions.

The Social Construction of Intellectual Property. This is study of the complex relationship of ideas to innovation. Like my studies of design, it is predicated on the idea that innovation is a social process. So, improving PARC's intellectual property position, means improving its communication practices. This project explores technologies to support the capture and development of intellectual property and the development of "communities of invention". Project leader.

Where Were We. An innovative system of digitally recorded audio and video that permits designers to include snippets of recently recorded material in everyday activity, such as brainstorming meetings.

Design Place 90. Created a shared work environment for industrial designers from David Kelley Designs (now IDEO). Observed them working at distance using CAD, e-mail, phone, conference phone, CADD, and Media Space. Observations used to guide development of next design of technology to support distributed work with and about real objects and spaces. Project leader.

Shared Drawing. Using video and computing technology, explored the ways drawing, sketching, and gesturing can be done at a distance.

Design Communications Workshops. Groups play roles of different interest groups in design to explore inter- and intra-group communications in design.

Electronic Notebook of Engineering Process. A record able video disc and hypercard were combined to form a prototype open-ended project notebook. Assisted R. Stults and K. Weber.

Mechanical Design Project. The design of a fix to a forthcoming product was studied. Video was used by members of the design team to record the their activities; the recordings were used by them as a medium of design communications and a shared project journal. With R. Stults, S. Minneman, and K. Weber.

Century Cable Harness Action Team. The use of video to communicate between various groups involved in the transit from design to manufacturing was prototyped and studied.

"The Portland Experiment". Compressed video, open audio, shared computer file systems, and regular group meetings were used to support a research laboratory split between Palo Alto and Portland. Was an on-going collaborator, contributor, regular lab staff, and part-time visionary, along with every other lab member.

Media Space Link from 16 to 26. Public spaces on different floors of PARC were linked using open audio and video. Explored the limitations of the technology to bridge cultural gap within organizations.

Object Service / Terrain of Associations. A representation of the associations individuals have that give design inspiration and shape design direction. The project explored various ways of maintaining a shared database so that a group could keep current with the design direction of its membership.

Office Design Project. 3 architects worked together using real-time and recorded video in a simulated physically-distributed design studio. Co-produced with Bob Stults.

Media Space. An audio/video/computing environment for temporally and physically disjoint designers. System is backbone of PARC multi-media research and the technological expression of ideas to support the social basis of design. A series of implementations were developed and used in regular work by PARC researchers and designers engaged in real design projects. Co-developer of system and project co-leader with Bob Stults.

ShopTalk. Produced a series of polemical and illustrative videos. Videos lay out need to look at design as social process and the ability of video (coupled with computing) to better support this social process.

House Addition. The process of designing and building of an addition to a house was videotaped and put on video discs. This was a demonstration of a prototype design journal.

Projects at UC Berkeley:

Numerically Valued Overlay Thesis project for Master of Architecture degree. Site planning computer system combining parcel-attribute model with linkages model .

Projects at Skidmore, Owings, & Merrill:

Pacific Bell San Ramon Valley Operating Center. Managed the largest CAD project SOM had undertaken at that time. Computer supported full-service project; responsible for service delivery, organization and training of staff, and new system development.

San Francisco Database. Organized systematic digitization of San Francisco CBD, waterfront, Civic Center, and other urban features. Provided first comprehensive computerized database of volumetric information.

Financial Management System Designed and implemented conversion to an on-line interactive accounting and job-costing system from a batch-oriented one. Enabled

accounting staff to support a company that tripled in size. Initiated integrated office automation system.

Manpower Management System Designed and implemented integrated project costing and planning system.

Pacific Gas and Electric Site Selection System Designed and wrote housing and transportation model to asses possible suburban sites for large office facility. System simulated impact on existing employees of relocation to possible suburban sites.

Davies Symphony Hall. Rapid structural engineering turn-around.

Bandhar Shahpur New Town Planning System Designed and wrote database system for land use planning. Allowed town planners to model economic and demographic impact of alternative layouts of town.

Bank of America Data Centers' EIR Developed 3-d CAD drawings for Environmental Impact Reports.