

University of Massachusetts Lowell
1 University Avenue
Lowell, Massachusetts 01854
September 2023

COMPREHENSIVE PROFESSIONAL VITAE

NAME: Kuhn, Sarah
DEPARTMENT: Psychology
College of Fine Arts, Humanities, and Social Sciences
RANK OR TITLE: Professor Emerita FIELD: Planning

A. EDUCATION AND ACADEMIC QUALIFICATIONS

1) Education

- 1987 Ph.D. Massachusetts Institute of Technology, Cambridge, MA
Department of Urban Studies and Planning
Dissertation: "From the Back Office to the Front Lines: the
computer software development labor process in a
changing business environment."
- 1974 B.A. Harvard University, Cambridge, MA
Philosophy and Social Relations

2) Academic Experience

- 2020-present Professor Emerita
University of Massachusetts Lowell, Lowell, MA
Department of Psychology
- 2010-2020 Professor
University of Massachusetts Lowell, Lowell, MA
Department of Psychology
- 2009-2010 Visiting Scholar
Franklin W. Olin College of Engineering
- 2008-2010 Professor
University of Massachusetts Lowell, Lowell, MA
Department of Regional Economic and Social
Development
- 2001-2002 Research Associate
Radcliffe Institute for Advanced Study, Harvard University

- 2000-2001 Fellow
Radcliffe Institute for Advanced Study, Harvard University

- 1998-2008 Associate Professor
University of Massachusetts Lowell, Lowell, MA
Department of Regional Economic and Social
Development

- 1996-1998 Assistant Professor
University of Massachusetts Lowell, Lowell, MA
Department of Regional Economic and Social
Development

- 1995-1996 Visiting Scientist
Massachusetts Institute of Technology, Cambridge, MA
School of Architecture and Planning

- 1990-1997 Assistant Professor
University of Massachusetts Lowell, Lowell, MA
Department of Policy and Planning

3) Professional Experience

- 1989-1990 Researcher
Soziologisches Forschungsinstitut, Göttingen, Germany
US-based subcontractor to international research project.

- 1988-1990 Consultant
Clients included AT&T Bell Laboratories and Polaroid
Corporation

- 1987-1988 Project Manager
Stone Center, Wellesley College, Wellesley, MA
Digital Equipment Corporation Project

B. PROFESSIONAL ACTIVITIES

1) Professional Association and Conference Participation

- 2023 (invited) Sarah Kuhn, Jennifer Queen. “Thinking with Things: Creating Effective and Engaging Classroom Experiences.” Workshop-In-A-Box, POD 2023. Pittsburgh, PA, November 16-19.

- 2023 (invited) Susan Hrach, Sarah Kuhn, Jennifer Queen. "Thinking with Bodies: How Physical Experiences Impact Student Learning." Interactive Session, POD 2023. Pittsburgh, PA, November 16-19.
- 2023 (invited) Sarah Kuhn. "Thinking With Things: Teaching for the Way We REALLY Learn." HBCU Faculty Development Network 30th Annual Conference. Houston, Texas. October 26-28.
- 2023 (invited) Jennifer Queen and Sarah Kuhn. "Thinking with Things: Employing Embodied Learning Using Physical Materials in College Classrooms." Innovative Teaching Talk. Scholarship of Teaching and Learning (SoTL) Summit, September 21-22. Virtual.
- 2023 (invited) Sarah Kuhn. "Creating the Inclusive STEM Classroom by Thinking with Things." Lightning Talk. North Carolina PKAL Regional Network Meeting. March 31. Virtual.
- 2023 (invited) Sarah Kuhn. "Thinking With Things: Deepening Learning and Engagement in the Classroom." Workshop. Scholarship of Teaching and Learning (SoTL) Commons Conference, Savannah, GA. February 15-17.
- 2022 (invited) Sarah Kuhn. "Thinking with Things: Creating Effective and Engaging Classroom Experiences." Workshop. POD 22 (Professional and Organizational Development Network in Higher Education), Seattle, WA, USA. November 16-20.
- 2022 (invited) Sarah Kuhn. "Supercharge Learning and Engagement by Thinking with Things." Scholarship of Teaching and Learning (SoTL) Summit, October 6-7. Virtual.
- 2022 (invited) Sarah Kuhn. "Thinking with Things: Creating an Effective and Engaging Classroom Experience." The Teaching Professor Conference. Atlanta, June 3-5. 60 minute workshop.
- 2021 (invited) Sarah Kuhn. "To Deepen Learning, Transform the Classroom." Association of American Colleges & Universities (AAC&U) Conference on General Education, Pedagogy, and Assessment. February 11. (Virtual live conference).
- 2017 (invited) Sarah Kuhn. Keynote speaker. "Thinking with (Visual) Things." International Visual Literacy Association 49th annual conference. September 14-17. Lesley University, Cambridge, MA.
- 2016 (invited) Sarah Kuhn, Respondent. "Entrepreneurial Developments in the Arts." Panel at 5th Annual Deshpande Symposium. June 13-15, Lowell, MA.

- 2016 (invited) Louis L. Bucciarelli and Sarah Kuhn. “Engineering and the Liberal Arts: Oil and Water, Dogs and Fleas, or Obligate Symbiosis.” Ninth Symposium on Engineering and Liberal Education. Union College, Schenectady, NY. 3-4 June.
- 2016 (invited) Poster Presenter. Sarah Kuhn, “Inclusion through Textiles: Creating a Pathway to and through STEM.” OPEN 2016, Venture Well 20th Annual Conference. Portland, OR. March 4-5.
- 2016 (invited) Presenter. Sarah Kuhn, “Why Fiber Arts in your Maker Space?” Post-Conference Workshop “Academic Maker Spaces 101.” OPEN 2016, Venture Well 20th Annual Conference. Portland, OR. March 6.
- 2015 (invited) Participant, Social Science Advisory Board member workshop and annual Summit, National Center for Women in Information Technology. May 19-21, Hilton Head, NC.
- 2015 (invited) “From Mathematical Model to Stim Toy and Beyond: Amazing Adventures with the Hyperbolic Plane.” Talk and workshop. Asperger/Autism Network (AANE), March 29, Watertown, MA.
- 2014 (invited) *ENG IUSE Ideas Lab: The Soft Path to Engineering Diversity*. Attended the NSF Ideas Lab on increasing diversity in undergraduate engineering education. Attendance was through a competitive NSF application process. March 17-21.
- 2014 (invited) Workshop Leader. “Crocheting Hyperbolic Planes.” Two workshops at *STEM to STEAM thru Synergy: Bridging Morphology, Biomimicry, Sustainability, and Synergetics*. Fourth Biennial Design Science Symposium, Rhode Island School of Design. Providence, RI. January 31-February 2.
- 2014 (invited) Panelist. “Building a Design Science Community.” *STEM to STEAM thru Synergy: Bridging Morphology, Biomimicry, Sustainability, and Synergetics*. Fourth Biennial Design Science Symposium, Rhode Island School of Design. Providence, RI. January 31-February 2.
- 2014 (invited) “The Soft Path to Design Science: Hyperbolic Crochet.” *STEM to STEAM thru Synergy: Bridging Morphology, Biomimicry, Sustainability, and Synergetics*. Fourth Biennial Design Science Symposium, Rhode Island School of Design. Providence, RI. January 31-February 2.
- 2013 (invited) “Tangible Tools for Participatory Evaluation: Deepening Creative Engagement Through Hand-On Materials.” (With Dr. Sharon Wasco) Workshop at American Evaluation Association conference, Washington DC. 16 October.

- 2013 (invited) “The Maker’s Mark: Student Agency, Engagement, and the Teaching of Technology.” Society for Social Studies of Science 2013, San Diego, CA. 10 October.
- 2012 (invited) Making Meaning [M2]. Symposium on Making and Assessment. New York Hall of Science, New York. October 1.
- 2012 Summer Institute in American Philosophy. Society for the Advancement of American Philosophy, Eugene, OR. July 16-21.
- 2012 (invited) “Feeling Your Way into Computing and Math.” Plenary Flash Talk. National Center for Women in Information Technology (NCWIT), May 22-25, 2012; Chicago, Ill.
- 2012 (invited) “Update: Math Recall and Attitudes with Crocheted Hyperbolic Planes.” Social Science Advisory Board (SSAB) after-conference meeting, National Center for Women in Information Technology (NCWIT), May 22-25, 2012; Chicago, Ill.
- 2012 Participant, Re:making ARCHITECTURE. Rhode Island School of Design, Providence, RI. March 13-14. (Invited; travel and attendance costs paid by RISD.)
- 2012 Workshop presenter (with Diana Coluntino and Adam Norton, Revolving Museum), “Write your Code/Draw your Artwork.” Invited presentation at “Design, Make, Play—Growing the Next Generation of Science Innovators.” January 13-14, New York Hall of Science, Queens, NY. (One of 14 workshops selected from 60 applicants.)
- 2012 Participant, NSF-sponsored Workshop, “Performance, Science, Science Education: Cultivating Ensembles in STEM Education and Research.” January 4-6, 2012; UConn Health Center, Farmington, CT. (Invited; travel and attendance costs paid by NSF.)
- 2011 Participant, National Science Foundation Workshop on Interdisciplinary Computing. November 3-5, Washington DC. (Invited; travel and attendance costs paid by NSF.)
- 2011 (invited) “*Innovation Through Making in the Classroom.*” Workshop Organizer and Presenter, National Collegiate Inventors and Innovators Association. An NSF Tools and Techniques Workshop. Washington, DC; March 24-26, 2011.
- 2011 Kimball, R. A.; Kohler, E. C.; Kuhn, S. “*Lego® Learning in Higher Education.*” 25th Annual Conference on the Teaching of Psychology: Ideas & Innovations. Tarrytown, NY. March 25-26.
- 2009 (invited) “*Lego® Engineering and Girls: Many Paths to the Future.*” Lego® Engineering Symposium, Tufts University Center for Engineering Education and Outreach. June.

- 2008 (invited) *"Identifying Technology Gaps in HAZMAT Operations."* Presented at the 2008 IEEE International Conference on Technologies for Homeland Security (HST '08--Technical Assistance from the Department of Homeland Security, Science & Technology Directorate) Co-Authors Jill Drury, Jonathan Arambula, Mark Micire, Sarah Kuhn, and Holly Yanco. May. Waltham, MA.
- 2008 (invited) Program Committee Member. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'08). Bloomington, IN.
- 2007 (invited) Participant. IMPACT 2007. A workshop for participants from academic institutions that have exemplary community service and social entrepreneurship programs. Raleigh, NC.
- 2006 (invited) Paper Presenter (with Fred Martin.) "Computing in Context: Integrating an Embedded Computing Project into a Course on Ethical and Societal Issues." Association for Computing Machinery Special Interest Group on Computer Science Education (ACM-SIGCSE 2006). Houston, TX.
- 2006 (invited) Program Committee Member. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'06).
- 2006 (invited) "Radical Design: From Pencils to Software to Processes to Clothing." Co-authors Georges Grinstein, Fred Martin and Sarah Kuhn. Presented at workshop "Exploring Design as a Research Activity." Designing Interactive Systems (DIS2006). Pennsylvania State University.
- 2005 (invited) Paper Presenter. "Women on the Edge of Change: Employees in United States Information Technology Companies." *Crossing Cultures, Changing Lives: Integrating Research on Girls' Choices of IT Careers*. Oxford, England.
- 2005 "Coming to our Senses in Higher Education: Using "low technology" to enhance engagement, learning, and embodied knowledge." Workshop, *The Teaching Professor* Conference, May. Invited as a "Back by Popular Demand" session; workshop repeated three times at conference because of very high demand. Chicago, IL.
- 2005 (invited) Paper Presenter. "Software and Internet Industry Workers in Massachusetts: Findings and Implications for the Future of Work." (With Paula Rayman.) *The Future of Work in Massachusetts*. Statewide conference sponsored by the Labor Centers of the University of Massachusetts.
- 2005 (invited) Participant. Impact 2005! A workshop hosted by the MIT IDEAS competition, with participant from academic institutions that have exemplary community service and social entrepreneurship programs. Cambridge, MA.

- 2004 Poster presenter. "A Qualitative Research Methods Course for Students from a Variety of Disciplines." Forum on Qualitative Research and Regional Development, presented by the UML Qualitative Research Network. Lowell, MA.
- 2004 "Coming to our Senses in Higher Education: Using "low technology" to enhance engagement, learning, and embodied knowledge." Workshop, The *Teaching Professor* Conference, May. With Robert Rasmussen.
- 2004 Poster presenter. "Project TechForce." Forum on Qualitative Research and Regional Development," presented by the UML Qualitative Research Network. Lowell, MA.
- 2004 Panelist. "Everything You've Always Wanted to Know About Qualitative Research Courses on the UML Campus but were Afraid to Ask." UML Qualitative Research Network.
- 2004 (invited) Workshop creator and facilitator. "The Software Engineering Code of Ethics, Participatory Designers, and the Public Good." Full day pre-conference workshop, Eighth Biennial Participatory Design Conference 2004. Toronto, Canada.
- 2004 (invited) Program Committee. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'04). Toronto, Canada.
- 2004 (invited) Paper Reviewer. ACM SIG CHI (Computer Human Interaction).
- 2004 (invited) "Chilly Climate, Engrossing Puzzle? Research Results on the Experience of Work in Computing Workplaces." Grace Hopper Celebration of Women in Computing, Chicago, IL. October 6-9.
- 2003 (invited) "What Makes Dick and Jane Run? Examining the retention of women and men in the software and Internet industry," with Joyce Davis. ACM SIGMIS CPR Conference, Philadelphia, PA.
- 2002 (invited) Program Committee. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'02). Malmö, Sweden.
- 2002 (invited) Panel Co-organizer and Participant. "The Software Studio in Software Engineering Education." CSEE&T 2002 (15th Conference on Software Engineering Education and Training). IEEE Computer Society. Covington, KY.
- 2001 (invited) Paper Reviewer. ASME Design Theory and Methodology Conference.
- 2001 "Design of Information Technology: Whose Values?" Institute for Women's Policy Research Conference, "The Status of Women: Facing the Facts, Forging the Future." Washington, DC. June.
- 2001 (invited) Advisory Committee. Mudd Design Workshop III, "Social Dimensions of Engineering Design," Harvey Mudd College, Claremont, CA.
- 2000 Tutorial. "Introduction to Participatory Design," with Michael Muller. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'2000). New York, NY.

- 2000 (invited) Tutorials Co-chair. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'2000). New York, NY.
- 2000 (invited) Program Committee. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'96). Cambridge, MA.
- 1999 "Learning from the Architecture Studio: Implications for Project-Based Pedagogy." Mudd Design Workshop II, *Designing Design Education for the 21st Century*. Harvey Mudd College, Claremont, California. May.
- 1999 (invited) Participant. Workshop on End User Programming. SIGCHI (Special Interest Group on Computer Human Interaction, Association for Computing Machinery) 1999.
- 1998 (invited) Program Committee Co-chair. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'98). Seattle, WA.
- 1996 Poster presenter. New England Assessment Network Fall 1996 Forum. "Using Student Drawings for Classroom Assessment." Boston, MA.
- 1996 (invited) Scientific Advisory Board. International Federation of Automatic Control. Fifth International Conference on Human Aspects of Advanced Manufacturing. Honolulu, Hawaii.
- 1996 (invited) Program Committee. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'96). Cambridge, MA..
- 1995 (invited) "Engineering Education and Engineering Practice: Improving the Fit." (With L.L. Bucciarelli). National Association for Science, Technology, and Society. Washington, DC.
- 1994 "Meeting of the Minds: The Challenges of Interdisciplinary and Inter-occupational Communication." Workshop (with Marian Williams). Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'94). Chapel Hill, NC.
- 1994 (invited) Program Committee. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'94). Chapel Hill, NC.
- 1993 (invited) Panelist. Greater Boston Association for Computing Machinery's Special Interest Group on Computer-Human Interaction. "Participatory Design--The Natural History of Communication." Tufts University, Medford, MA.
- 1992 Program Committee Co-chair. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'92). Cambridge, MA.
- 1992 Conference Co-chair. Computer Professionals for Social Responsibility, Participatory Design Conference (PDC'92). Cambridge, MA.
- 1992 (invited) "Worlds Apart: Engineers, Machinists, and a Skill-Based Approach to Production." Society for the Social Study of Science (joint with EASST). Göteborg, Sweden.

- 1992 (invited) "Engineers and Machinists: Conceptual Barriers to Skill-Based Systems." International Federation of Automatic Control, Symposium on Automated Systems Based on Human Skill (and Intelligence). Madison, WI.
- 1992 (invited) "Can We Talk? Engineers, Machinists, and the Barriers to a Skill-Based Approach to Production." Computer Professionals for Social Responsibility. Directions and Implications of Advanced Computing. Berkeley, CA.
- 1990 (invited) Plenary Panelist, Gender and Computing. Association for Computing Machinery, Computers and the Quality of Life. Washington, DC.
- 1985 "A Working Hypothesis: Observations on the Reorganization of Work in the Systems Department of a Bank." Association of Collegiate Schools of Planning. Milwaukee, WI.

2) Honors, Awards, and Fellowships

Teaching Award, Department of Regional Economic and Social Development, University of Massachusetts Lowell, 2005-2006

Faculty Associate, Center for Women and Work, University of Massachusetts Lowell. 2004-2012

CAS Faculty Fellow, IBM Centre for Advanced Studies, IBM Toronto Laboratory, Toronto, Canada. January 2003-June 2004

Fellowship, Radcliffe Public Policy Center, Radcliffe Institute for Advanced Study, Harvard University 2000-2001

Teaching Award, Policy and Planning Department, University of Massachusetts Lowell, 1996-97

Biographee, Who's Who in America, 58th edition

Who's Who in the World, 28th Edition

Biographee, Who's Who in Finance and Industry, 25th edition

Biographee, Who's Who of American Women, 16th, 25th, and 28th editions

Biographee, Who's Who in American Education, 7th, 8th editions

Biographee, Who's Who Among America's Teachers, 9th edition

Biographee, Who's Who of Emerging Leaders in America, 2nd and 3rd editions

Fellow, Harvard-MIT Joint Center for Urban Studies, 1982-83

Nominee, Ida M. Green Award, Massachusetts Institute of Technology, 1978

The Signet Literary Honor Society, Harvard University

Bachelor's Degree *Cum Laude*, Harvard University

3) Non-Teaching Activities

a) Referee for Academic Journals (invited)

ACM Transactions on Computing Education

Communications of the ACM

Computer Supported Cooperative Work

HCI Journal

Human Computer Interaction

IEEE Software

Journal of the American Society for Information Science

Science and Engineering Ethics

The Information Society

Arabian Journal for Science and Engineering

b) Reviewer of Funding Proposals (invited)

National Science Foundation (NSF)

Fonds zu Förderung der Wissenschaftlichen Forschung (Austrian
Science Fund)

Danmarks Grundforskningsfond (Danish National Research
Foundation)

Social Sciences and Humanities Research Council of Canada
(SSHRC)

c) Reviewer of Book Manuscripts and Proposals (invited)

Macmillan Publishing Company

McGraw Hill

MIT Press

Sage Publications

Stanford University Press

Routledge

d) Professional Association Memberships

American Planning Association

Association for Computing Machinery

Association of Collegiate Schools of Planning
 Computer Professionals for Social Responsibility
 Society for the Advancement of American Philosophy
 Society for the Social Study of Science
 Society for Philosophy and Technology

C. RESEARCH

1) Grant and Contract Activity--funded

2016	“ADVANCE: Institutional Transformation: Making WAVES: Disrupting Microaggressions to Propagate Institutional Transformation.” National Science Foundation. Jacqueline Moloney, PI. With Meg Bond, Julie Chen, Marina Ruths, and Margaret Sobkowitz-Kline, co-PIs. Sarah Kuhn, Senior Personnel.	\$3,455,590.
2015	Sarah Kuhn, PI. “Lowell Tex: Embracing Lowell’s Cultural, Historical, and Educational Assets to Create Pathways to STEM.” Co-investigators: Chris Hansen, Engineering; David Kazmer, Engineering and UTeach; Ken Levasseur, Mathematics and UTeach; Emmanuelle Reynaud, Engineering; Michelle Scribner-MacLean, Education and UTeach; Sheila Kirschbaum, Tsongas Industrial History Center; Diana Coluntino, New Vestures Fashion Maker Space; Todd Smith, American Textile History Museum; and Chriztine Foltz, Patricia Wilson Nguyen, and Alessandrina Costa, fiber arts experts. UMass President’s 2015 Creative Economy Initiatives Fund.	\$34,500.
2011	Senior Personnel, “Computational Thinking Through Computing and Music.” Jesse Heines, Principal Investigator. National Science Foundation. Award # DUE-1118435. August 1, 2011- July 31, 2014.	\$449,995.
2010	Sarah Kuhn, PI. “EAGER: Thinking With Things: Remaking Learning in Higher Education and Beyond.” National Science Foundation. Award # IIS-1042580. August 15, 2010-July 31, 2013.	\$196,049.
2009	Sarah Kuhn, Senior Personnel. “SLICES: Community and Industry Reaching Into Computer, Lab, and Engineering Sciences.” National Science Foundation	\$289,999.

#DUE- 0920574. [PI John Duffy; co-PIs Barry, Martin, and Mittler.] 08/1/11 – 07/31/14.

2009	Sarah Kuhn, Senior Personnel. “Engineering for the Common Good.” National Science Foundation #EEC-0935185. [PI John Duffy; co-PIs Barry, Gu, Lee, and Willis (UML Engineering faculty).] 08/1/11 – 07/31/14	\$399,629.
2007	Sarah Kuhn, Co-PI. National Science Foundation. “Internet System for Networked Sensor Experimentation (iSENSE)” [Fred Martin, PI; Michelle Scribner-MacLean, Co-PI.]	\$392,796.
2007	Sarah Kuhn, Senior Personnel/Co-PI*. National Science Foundation. CPATH CB: Performamatics: Connecting Computer Science to the Performing, Fine, and Design Arts. [Jesse Heines, PI; Gena Greher, James Jeffers, Fred Martin, Karen Roehr, Wanda Strukus, Co-PIs] Requested Amount: \$409,126. *Listed in proposal narrative as one of six Co-PIs, but NSF FastLane allows only four.	\$368,162.
2006	Sarah Kuhn, Co-PI. National Science Foundation. “DRU: Analysis of Current HAZMAT Response Capabilities and the Impact of Human Robot Interaction on Risk Mitigation [Holly Yanco, PI; Jill Drury Co-PI]	\$124,765.
2004	Sarah Kuhn. Committee on Industrial Theory and Assessment. “Curriculum Module to Support Sustainable Development Learning.” [With Fred Martin] Seed Grant.	\$5,000
2001/	Sarah Kuhn, Co-PI. National Science Foundation. “Women in Information Technology Workplaces” (Award # EIA0089965) [Paula Rayman, PI]	\$584,674
2001	Sarah Kuhn. Fellowship Stipend. Radcliffe Institute for Advanced Study. Paid through UML Research Foundation.	\$ 17,500
2000	Sarah Kuhn, PI. National Science Foundation. “Developing and Testing a Method for Using Democratic Design Criteria Within Participatory Technology Assessment.” (Award #SES-0090256) [Richard Sclove, Co-PI; Transferred to new PI Harold Salzman January 2001]	\$210,166

1999	Sarah Kuhn. US Department of Labor. “Y2K Workers: What Happens on January 2, 2000?” Grant # 12-08494. [With Harold Salzman]	\$ 9,979
1999	Sarah Kuhn. Massachusetts Foundation for the Humanities. “Scenario Workshop on Democracy and Sustainability.” Challenge grant. [With Richard Sclove]	\$15,000
1998	Sarah Kuhn. Committee on Industrial Theory and Assessment, University of Massachusetts Lowell. “Informational Context Supporting Design for Environment in the Merrimack Valley Region.” [With Elizabeth Harriman and Janet Clark]	\$ 3,400
1997	Sarah Kuhn. Committee on Industrial Theory and Assessment, University of Massachusetts Lowell. “Ethical and Infrastructural Issues of University-Community Interaction.”	\$ 2,500
1996 97	Sarah Kuhn, PI. National Science Foundation. Career Advancement Award.	\$50,000
1993	Sarah Kuhn. Committee on Industrial Theory and Assessment, University of Massachusetts Lowell. "Study of Cross-Disciplinary Collaboration." [With Marian Williams]	\$ 5,000
1991 94	Sarah Kuhn, PI. National Science Foundation. Principal Investigator. "Engineering Values as a Barrier to the Effective Use of Skilled Workers." [Charles Richardson, Co-PI]	\$72,000
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Total grant and contract funding		\$1,860,942
Total grant and contract funding 1998-2007		\$1,731,442
Total grant and contract funding from <i>outside sources</i> 1998-2007		\$1,715,542

2) Grant and Contract Activity—pending or not funded

2017	“Improving Undergraduate Education with Data-Infused Mobile Computing.” National Science Foundation. Fred Martin, PI. Hongwei Zhu, Judith Davidson, co-PIs. Sarah Kuhn, Senior Personnel.	pending
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2016	“Collaborative Research: Empowering Undergraduate Discipline-Specific Learning using Data and Mobile Computing.” National Science Foundation. Fred Martin, PI. Linda Grisham, Hongwei Zhu, Sarah Kuhn, co-PIs. \$1,003,351.	not funded
2014	“FAIRR: Fiber Arts Integration for Recruitment and Retention.” \$1,533,831. National Science Foundation, DUE/IUSE #1445395. 10/1/14 – 9/30/19. Sarah Kuhn, PI.	not funded
2014	“Transforming Engineering Education through Making (TEEM)” \$1,499,994. National Science Foundation, DUE/IUSE #1431228. 9/1/14 – 8/31/19. David Kazmer, PI. Sarah Kuhn, co-PI.	not funded
2012	“Pathways: Computational and Mathematical Engagement through Weaving.” Preliminary proposal to National Science Foundation’s Advancing Informal STEM Learning (AISL) program. Submission of full proposal in January 2013 encouraged.	encouraged
2011	“Computational and Mathematical Engagement Through Weaving,” with Fred Martin (CS), Shelley Rasmussen (Mathematics), Sheila Kirschbaum (Education and Tsongas Industrial History Center), Diana Coluntino (Revolving Museum), and Jim Coleman (American Textile History Museum.)	not funded
2008	Sarah Kuhn, PI. National Science Foundation. “Collaborative Research: GSE/RES: Research on Faculty Change: Adoption of Educational Innovations to Increase Participation of Women in Computing.” [Lecia Barker, PI, National Center for Women in Information Technology.] \$86,777. requested.	not funded
2007	Sarah Kuhn, PI. National Science Foundation. “Pilot: Ideas With Handles: Tangible Modeling Tools for Creative Discovery in IT.” [Fred Martin, Co-PI] \$198,672. requested.	not funded
2006	Sarah Kuhn, Co-PI. National Science Foundation. “Radical Design: A Process and Architecture for Building Heterogeneous Software Systems.” Co-	not funded

	Principal Investigator [Georges Grinstein, PI; Fred Martin, Co-PI] Requested amount: \$643,265.	
2006	Sarah Kuhn, Carol Strohecker, and Lise Motherwell. “Conversing with Materials.” Proposal to the Rockefeller Foundation’s Bellagio Study and Conference Center. Requested full funding of a 5 day conference at the Center.	not funded
2005	Sarah Kuhn, Co-PI. National Science Foundation. “Designing Effective Team-Based Human-Robot Interaction Using Risk and Decision Analysis.” [Holly Yanco, PI; Jill Drury, Robb Wilcox, Co-PIs] Requested amount: \$749,623.	not funded
2004	Sarah Kuhn, PI. National Science Foundation. “‘Computing With a Purpose’ in an Introductory Design Course.” [Fred Martin, Co-PI] Requested amount: \$997,357.	not funded
2004	Sarah Kuhn, Co-PI. National Science Foundation. “Engaging Computing: Integrating Computer Science into Undergraduate Graphic Arts and Computer Science Courses.” [Fred Martin, PI; Karen Roehr, Co-PI] Requested amount: \$192,879.	not funded
2004	Sarah Kuhn, Co-PI. National Science Foundation. “Engaging Computing: Integrating Computer Science into Undergraduate Graphic Arts and Computer Science Courses.” [Fred Martin, PI; Karen Roehr, Co-PI] Requested amount: \$73,166.	not funded
2003	Sarah Kuhn, PI. National Science Foundation. “Are Introductory STEM Design Experiences Effective in Promoting Engagement?” [Fred Martin and Lynn A. Stein, Co-PIs] Requested amount: \$1,699,007.	not funded
1996	Sarah Kuhn, Co-PI. “Interdisciplinary Research on Collaborative Learning Environments for Software Design.” National Science Foundation. [Marian Williams, PI]	not funded

3) Academic and Professional Publications

a) Books and Monographs

- 2022 Sarah Kuhn. (2022) *Transforming Learning Through Tangible Instruction: The Case for Thinking With Things*. Routledge.
- 1991 Martin Baethge, Andrea Grimm, Sarah Kuhn, Jurgen Neubert, and Herbert Oberbeck. Regulierung und Deregulierung der Dienstleistungsarbeit in der BRD und den USA. Eschborn, Germany: RKW.
- 1986 High Tech Research Group (including Sarah Kuhn). Whatever Happened to Job Security? Somerville, MA: High Tech Research Group.
- 1984 Harley Shaiken, Sarah Kuhn, and Steven Herzenberg. Automation and the Workplace: Case Studies on the Introduction of Programmable Automation in Manufacturing: Work environment effects. Volume 2, Part A of Computerized Manufacturing Automation: Employment, education and the workplace. (Washington, DC: US Congress, Office of Technology Assessment, OTA-CIT-253, April.
- 1984 High Tech Research Group (including Sarah Kuhn). Massachusetts High Tech: The promise and the reality. Somerville, MA: High Tech Research Group.
- 1982 Sarah Kuhn. Computer Manufacturing in New England: Structure, location, and labor in a growing industry. Cambridge, MA: Harvard-MIT Joint Center for Urban Studies.
- 1981 Barry Bluestone, Patricia Hanna, Sarah Kuhn, and Laura Moore. The Retail Revolution: Market transformation, investment, and labor in the modern department store. Boston, MA: Auburn House.

b) Publications in Refereed Journals

- 2016 Sarah Kuhn. "Fiber Arts and Generative Justice." In *Teknokultura: Journal of Digital Culture and Social Movements*. http://dx.doi.org/10.5209/rev_TEKN.2016.v13.n2.52809 ISSN: 1549 2230 Revista Teknokultura, (2016), Vol. 13 Núm. 2: 461-489. *Teknokultura* is an open access, trilingual, peer reviewed journal published in Spain. It serves the science, technology, and society community worldwide.
- 2016 Priya Dasgupta, Laura Punnett, Susan Moir, Sarah Kuhn, Bryan Buchholz. "Does drywall installers' innovative idea reduce the ergonomic exposures of ceiling installation: a field case study." *Applied Ergonomics*. Published online 23 February 2016. Volume 55, Pages 183-193 (July). Impact factor 2.023; 5-year impact factor 2.143. <http://dx.doi.org/10.1016/j.apergo.2016.02.004>. This article comes from Dasgupta's dissertation research. As a member of her committee, I instructed Dasgupta on qualitative field research methods, oversaw the qualitative

- aspects of her research, commented on multiple manuscript versions, and attended several dissertation committee meetings.
- 2014 Priya Dasgupta, X. Jing, Laura Punnett, Sarah Kuhn, Bryan Buchholz. "Assessing the Ergonomic Exposures for Drywall Workers." International Journal of Industrial Ergonomics.
- 2013 Sarah Kuhn. "Coming to our Senses: Thinking with Things in the Classroom." The Atrium: A Journal of Academic Voices. Spring.
- 2009 Fred Martin, Gena Greher, Jesse Heines, James Jeffers, Hyun-Ju Kim, Sarah Kuhn, Karen Roehr, Nancy Selleck, Linda Silka, and Holly Yanco. "Joining Computing and the Arts at a Mid-Size University." Journal of Computing Sciences in Colleges, v. 24, no. 6:87–94, June.
- 2008 Jesse M. Heines, Jim Jeffers, and Sarah Kuhn. "Performamatics: Experiences with Connecting a Computer Science Course to a Design Arts Course." The International Journal of Learning. Volume 15 (2):9-16. ISSN 1447-9494.
- 2007 Sarah Kuhn and Judith Davidson. "Thinking With Things, Teaching With Things: Enhancing Student Learning in Qualitative Research Through Reflective Use of Tools and Materials." Qualitative Research Journal. Volume 7, Issue 2; 2007; 63-75.
- 2001 Sarah Kuhn. "Learning from the Architecture Studio: Implications for Project-Based Pedagogy." International Journal of Engineering Education. Vol. 17, Nos. 4 and 5; pp. 349-352.
- 2001 Sarah Kuhn. "Commentary on: The Greening of Engineers: A cross-cultural experience." Science and Engineering Ethics 02/2001; 7(1):123-124. DOI:10.1007/s11948-001-0029-3
- 2000 Sarah Kuhn. "Interstate 495 West: The Challenges of Change in an Information Technology Corridor." Massachusetts Benchmarks. Vol. 3, No. 4 (Fall). Pp. 18-22. (Peer reviewed article).
- 1998 Sarah Kuhn. "When Worlds Collide: Engineering Students Encounter Social Aspects of Production." Science and Engineering Ethics. Vol. 4: 457-472.
- 1998 Sarah Kuhn. "The Software Design Studio: An Exploration." IEEE Software. Vol 15 (2):65-71. March/April.
- 1994 Sarah Kuhn and John Wooding. "The Changing Structure of Work in the United States: Part I--The impact on income and benefits." New Solutions, Volume 4, Number 2. Winter. pp. 43-56

- 1994 Sarah Kuhn and John Wooding. "The Changing Structure of Work: Implications for Health and Welfare, Part II." New Solutions, Volume 4, Number 4. Summer. pp. 21-27
- 1993 Sarah Kuhn and Michael Muller, Guest Editors and "Introduction." Communications of the ACM. Special Issue on Participatory Design. Volume 36 (4):24-28; June 1993.
- 1993 Sarah Kuhn and Charles Richardson. "Metamorphosis: An Engineering Student's Story." New Solutions Vol. 3 (3):68-77. Spring.
- 1986 Harley Shaiken, Stephen Herzenberg, and Sarah Kuhn. "The Work Process Under More Flexible Production." Industrial Relations. Volume 25 (2):167–183, March 1986.

c) Publications in Edited Books

- 2019 Kuhn, Sarah, "Mending our Clothing, Mending the World," in Hinda Mandell, ed. *Crafting Dissent*. Rowman & Littlefield.
- 2008 Sarah Kuhn. "Blocks." In Sherry Turkle, editor. Falling for Science: Objects in Mind. Cambridge, MA: MIT Press. (Pp. 242-246.)
- 2007 Sarah Kuhn and Paula Rayman. "Women on the Edge of Change: Employees in United States Information Technology Companies." In Carol Burger, Elizabeth Creamer, and Peggy Meszaros, eds. Reconfiguring the Firewall: A Cross-Cultural Context for Recruiting Women to IT. Wellesley, MA: A.K. Peters, Ltd. (Pp. 191-210)
- 2007 Sarah Kuhn and Paula Rayman. "Software and Internet Industry Workers." In Tom Juravich, editor. The Future of Work in Massachusetts. Amherst: University of Massachusetts Press. (pp. 93-109)
- 2003 Sarah Kuhn and John Wooding. "The Changing Structure of Work in the United States: Implications for Health and Welfare." In Richard Hofrichter, ed. Health, Justice, and Social Policy. San Francisco: Jossey-Bass, pp. 251-261.
- 1998 Sarah Kuhn. "Retail Workers." In Neil Larry Shumsky, ed. American Cities and Suburbs: An Encyclopedia. New York: Garland Publishing.
- 1997 Louis L. Bucciarelli and Sarah Kuhn. "Engineering Education and Engineering Practice: Improving the fit." In Stephen R. Barley and Julian Orr, editors, Between Craft and Science: Technical Work in U.S. Settings. ILR Press/Cornell University Press. (Pp. 210-229)

- 1997 Sarah Kuhn and John Wooding. "The Changing Structure of Work: Income and Benefits." In Charles Levenstein and John Wooding, eds. Work, Health, and Environment: Old Problems, New Solutions. New York: The Guilford Press. (Reprinted)
- 1997 Sarah Kuhn and John Wooding. "The Changing Structure of Work: Health and Welfare, Part II." In Charles Levenstein and John Wooding, eds. Work, Health, and Environment: Old Problems, New Solutions. New York: The Guilford Press. (Reprinted)
- 1996 Sarah Kuhn. "Design for People at Work." In Terry Winograd, ed. Bringing Design to Software. Reading, MA: Addison-Wesley. (Pp. 273-289)
- 1996 Sarah Kuhn and Terry Winograd. "Participatory Design." In Terry Winograd, ed. Bringing Design to Software. Reading, MA: Addison-Wesley. (Pp. 290-294)
- 1993 Sarah Kuhn and Charles Richardson. "Standing on the Edge: Engineering Students Encounter Skill-Based Automation" in N. Harvey and F. Emspak, eds. Automated Systems Based on Human Skill and Intelligence. Pergamon Press, pp. 19-26.
- 1989 Sarah Kuhn. "The Limits to Industrialization: Computer software development in a large commercial bank." In The Transformation of Work? Stephen Wood, ed. London: Unwin Hyman. (pp. 266-278)
- 1987 Sarah Kuhn and Barry Bluestone. "Economic Restructuring and the Female Labor Market: The impact of industrial change on women." In Women, Households, and the Economy. Lourdes Beneria and Catharine Stimpson, eds. New Brunswick, NJ: Rutgers University Press. (Pp. 3-32)

d) Refereed Proceedings

- 2013 Dasgupta, P., Punnett, L., Moir, S., Kuhn, S., Buchholz, B. "An Innovative Idea for Reducing the Musculoskeletal Disorders in Drywall Installation." Proceedings of the Human Factors and Ergonomics Society Annual Meeting. September 2013, Vol. 57(1), 989-993.
- 2010 Martin, F., Kuhn, S., Scribner-MacLean, M., Corcoran, C., Dalphond, J., Fertitta, J., McGuinness, M., Christy, S., and Rudnicki, I. "iSENSE: A Web Environment and Hardware Platform for Data Sharing and Citizen Science." *Proceedings of the 2010 AAAI Spring Symposium*, workshop on Using Electronic Tangibles to Promote Learning: Design and Implementation, Stanford CA. <http://www.aaai.org/ocs/index.php/SSS/SSS10/paper/view/1099>

- 2008 Jill L. Drury, Jon Arambula, Sarah Kuhn, Mark Micire, and Holly A. Yanco. "Identifying Technology Gaps in Hazardous Materials Operations." In *Proceedings of the 2008 IEEE International Conference on Technologies for Homeland Security*, pp. 231 - 236, Waltham, MA, May.
- 2007 Fred Martin, Georges Grinstein, and Sarah Kuhn. "A Radical Design Course: Leveraging APIs for Creativity and Innovation in Software." In *Proceedings of the 11th IASTED International Conference on Software Engineering and Applications*. Cambridge, MA, USA. Pages 318-323.
- 2006 Fred Martin and Sarah Kuhn. "Computing in Context: Integrating an Embedded Computing Project into a Course on Ethical and Societal Issues." In *Proceedings of the Association for Computing Machinery Special Interest Group on Computer Science Education (ACM-SIGCSE 2006)*, Houston, TX. (Pp. 525-529)
- 2004 Sarah Kuhn. "The Software Engineering Code of Ethics, Participatory Designers, and the Public Good." *Proceedings of the Eighth Biennial Participatory Design Conference 2004, Volume II*. Toronto, Canada. Pages 211-212.
- 2003 Joyce Davis and Sarah Kuhn. "What Makes Dick and Jane Run? Examining the retention of women and men in the software and Internet industry." *Proceedings of the 2003 ACM SIGMIS CPR Conference*, April 2003. Pp. 154-156.
- 2002 Sarah Kuhn, Orit Hazzan, James Tomayko, and Bruce Corson. "The Software Studio in Software Engineering Education." *Proceedings of the 15th Conference on Software Engineering Education and Training (CSEE&T 2002)*. IEEE Computer Society; Los Alamitos, CA.
- 2000 Sarah Kuhn. "Learning from the Architecture Studio: Implications for Project-Based Pedagogy." In Proceedings of Mudd Design Workshop II, *Designing Design Education for the 21st Century*. Harvey Mudd College, Claremont, California.
- 1996 Sarah Kuhn and Charles Richardson. "Conceptual Barriers to Effective Manufacturing: Machinists, Engineers, and Worldviews." In Manufacturing Education for the 21st Century. Proceedings of the International Conference on Education in Manufacturing, Society of Manufacturing Engineers.
- 1994 Sarah Kuhn, Marian Williams, and Charles Richardson. "Meeting of the Minds: The Challenges of Interdisciplinary and Inter-occupational Communication." In PDC'94: Proceedings of the Participatory Design Conference. Computer Professionals for Social Responsibility. Chapel Hill, NC.
- 1992 Michael Muller, Sarah Kuhn, and Judith Meskill, editors. PDC'92: Proceedings of the Participatory Design Conference. Computer Professionals for Social Responsibility; Cambridge, MA.

- 1992 Sarah Kuhn, Charles Richardson, and Brian Wheeler. "Engineering Values as a Barrier to the Effective Use of Skilled Workers." 1992 Symposium Proceedings, Directions and Implications of Advanced Computing, Berkeley, CA.

e) Other Proceedings

- 1996 Sarah Kuhn. "Educating Software Designers Using a Studio Approach: An exploratory study." Proceedings of the Fourth Software Cultures Workshop in Vienna. Abteilung für CSCW, Institut für Gestaltungs- und Wirkungsforschung, Technische Universität Wien, Vienna, Austria.
- 1983 Sarah Kuhn. "Technology Intensive Industries and State Economic Development." Employment in the 1980s. The Council of State Governments, Boston, MA.

f) Op Eds, White Papers, and Policy Publications

- 2014 Sarah Kuhn, "Computer Engineer Barbie: Not Just Anatomically Incorrect." WBUR's Cognoscenti blog. December 9, 2014. Spent more than a week at the top of the "Most Popular" list. <http://cognoscenti.wbur.org/2014/12/09/barbie-girls-science-sarah-kuhn>
- 2013 Sarah Kuhn, "Thinking With Things: Feeling Your Way Into STEM." In Roger F. Malina, Carol Strohecker, Carol LaFayette, and Amy Ione, eds. Steps to an Ecology of Networked Knowledge and Innovation: Enabling new forms of collaboration among sciences, engineering, arts, and design. Volume II: Meta-analyses, Abstracts, and White Papers. SEAD, the Network for Sciences, Engineering, Arts & Design.
- 2006 Sarah Kuhn and Paula Rayman, "Software and Internet Industry Workers: Implications for the Future of Work in Massachusetts." The New England Journal of Public Policy, Volume 21, Number 1 (October).
- 2005 Sarah Kuhn. "To Enrich and to Serve: Defining and Supporting Public Service at the University of Massachusetts Lowell." Committee on Industrial Theory and Assessment Working Paper, University of Massachusetts Lowell.
- 2001 Sarah Kuhn and Senator David Magnani. "Route 495's Wake-Up Call." Op Ed, *The Boston Globe*, June 7, 2001.
- 2001 Sarah Kuhn and Senator David Magnani. "Good News from the 'Corridor.'" Op Ed, *Metrowest Daily News*, April 5, 2001.

- 2001 Mary Catherine Bateson, Sarah Kuhn, and Cecily Selby. "An Open Letter to Dean Faust." *Radcliffe Quarterly*, Summer 2001.
- 2000 Harold Salzman and Sarah Kuhn. "The Y2K-IT Workforce and the Organizational Impacts of Y2K." Report to the Office of Policy, US Department of Labor.
- 1999 Howie Goodell, Sarah Kuhn, David Maulsby, and Carol Traynor. "End User Programming/Informal Programming." *SIGCHI Bulletin*, Volume 31, Number 4. October. Pages 17-21.
- 1994 Harold Salzman and Sarah Kuhn. "Increasing Productivity By Integrating Design Engineering and the Work Force: Participatory Design, Human-Centered Design, and the Development of Human-Centered Production Systems." (Co-signers from industry Patricia Anklam [Digital Equipment Corp.], and Lucy Suchman and Randall H. Trigg [Xerox Corp.]) White Paper submitted to the National Institute of Standards and Technology's Advanced Technology Program.
- 1982 Sarah Kuhn. "Evaluating High Tech." *The Entrepreneurial Economy*. (Volume 1, Number 6). December.

3) Other Research or Creative Activities

a) Keynote and Plenary Presentations—invited

- 2018 "Separated at Birth: Fiber Arts and Science, Technology, Engineering, and Math." Common Cod Fiber Guild Speakers Series, Cambridge, MA. October 19.
- 2017 "Thinking With Things: Coming to our senses in education." The Cambridge School of Weston, Weston, MA. Hands-on Plenary Workshop for CSW's professional development day for teachers and staff. November 27.
- 2007 "Reflections on an Internship at the Charles and Ray Eames Design Studio." Center for Design Innovation, Idea Exchange Symposium. Winston-Salem NC. October 4.
- 2007 "Design Thinking and Design Practices: Integrating social needs and technical developments." Center for LifeLong Learning and Design (L3D) Symposium, University of Colorado. May 16.
- 2006 "Coming to our Senses in Higher Education: Using 'Low Technology' to Enhance Engagement, Learning & Embodied Knowledge." *The Teaching Professor* Conference; Half-day paid pre-conference workshop. May 19.

- 2002 “Design for Working, Living, and Learning.” Media Lab Europe, Colloquium Series, Dublin, Ireland. May.
- 2001 “Values in the Design of Information Technology.” Colloquium, Radcliffe Institute for Advanced Study. March.
- 2000 Panelist, Institute Kick-Off, I-495 Institute for Local Officials. University of Massachusetts Center for Professional Education, Westborough, MA.
- 1999 Panelist. MassINC and the Massachusetts Foundation for the Humanities Commonwealth Forum. “Conflict or Consensus? The Renewed Debate Over Land-Use Planning in Massachusetts.” Boston, MA.
- 1997 Opening Keynote speaker. Coalition of Labor Union Women, National Executive Board meeting. Washington, DC.
- 1994 Plenary panelist. Massachusetts Institute of Technology, Technology and Employment. "The Employment Crisis and its Solutions." Cambridge, MA.
- 1993 Plenary speaker. Center for Law and Education. Taking Down the Walls: A Summer Workshop on Vocational Education, Curriculum Planning and Staff Development. “Integrating Management into the Vocational Education Curriculum.”
- 1984 Panelist. "Is High Tech the Answer?" National call-in radio show, Radio Station WBAI, New York City, NY.

b) Academic Presentations—invited

- 2023 “Thinking with Things: Transforming Learning Across the Disciplines through Tangible Instruction.” Faculty Development Workshop. Bates College, Lewiston, Maine. May 10.
- 2022 The Case for Thinking with Things. Guest in the classes of Alex Ruthmann and Margaret Minsky. New York University Shanghai. March 1, via Zoom.
- 2019 “Thinking With Things: Lessons from my Unusual Classroom.” Lowell Center for Space Science & Technology. March 1.
- 2017 Elizabeth Famosa and Sarah Kuhn, “Makerspace Evaluation.” Poster presented by Center for Program Evaluation doctoral student Famosa at Eastern Evaluation Research Society 40th Anniversary Annual Conference. April 3.
- 2017 “Thinking With Things: Remaking Learning in College and Beyond.” College of Visual and Performing Arts, University of Massachusetts Dartmouth. February 1.

- 2017 “Coming to our Senses in the Classroom: Enabling the embodied learner.” Flash talk, UML Faculty Teaching, Learning, Research and Creative Works Symposium. March 2.
- 2016 Presenter (with Michelle Haynes-Baratz), “Math Anxiety & Women: Testing an Intervention.” UMass Lowell Gender Studies Conference. February 18.
- 2007 “Thinking with Your Hands.” Presentation to Honors Program Colloquium, University of Massachusetts Lowell. September.
- 2005 “Thinking with Your Hands.” Presentation to Honors Program Colloquium, University of Massachusetts Lowell. November.
- 2005 Presenter. “Women and Work on the Information Technology Frontier.” Lowell Women’s Week presentation, sponsored by Center for Women and Work, Labor Extension Program, Regional Economic and Social Development, and Gender Studies Programs.
- 2005 “Values in the Design of Information Technology.” Departmental Colloquium, Computer Science Department, University of Massachusetts Lowell.
- 2005 “Thinking with Your Hands.” Presentation to Humanities and Social Sciences Colloquium, *The Salon*, University of Massachusetts Lowell. October.
- 2002 “The Software Design Studio and Social Change.” Technology in the New Global Context: Rethinking Social Responsibility. 2002 Student Pugwash Northeast Regional Conference, MIT. Cambridge, MA.
- 2000 “Lessons from the Software Design Studio.” Mitsubishi Electric Research Laboratories. Cambridge, MA.
- 2000 “The Studio in Architectural Education.” Rensselaer Polytechnic Institute, Troy, NY.
- 2000 “Participatory Design in Theory and Practice.” Computer Science Department, Swarthmore College. April.
- 2000 “Learning from the Software Design Studio.” Research Group Presentation, Lotus Development Corporation, Cambridge, MA.
- 1999 “The Software Design Studio: Lessons for Pedagogy and for Practice.” Computer Science Colloquium, Worcester Polytechnic Institute. September.
- 1998 “The Architectural Design Studio as a Model for Technical and Social Education.” *The Salon*, College of Arts and Sciences, University of Massachusetts Lowell.

- 1997 “To Enrich and to Serve: Defining and Supporting Public Service at the University of Massachusetts Lowell.” Approaches to Sustainable Development, Committee on Industrial Theory and Assessment, University of Massachusetts Lowell.
- 1997 Roundtable discussion on Diversity and the Curriculum. Third Symposium: Diversity and Institutional Change, Council on Diversity and Pluralism, University of Massachusetts Lowell.
- 1997 “Public Policy and Education for the Twenty-First Century.” Honors Colloquium, University of Massachusetts Lowell.
- 1997 “Observations from the Software Design Studio.” Workshop on Undergraduate Multidisciplinary Design Pedagogy. Rensselaer Polytechnic Institute, Troy, NY.
- 1996 “Educating Software Designers Using a Studio Approach: An exploratory study.” Fourth Software Cultures Workshop in Vienna, Austria.
- 1996 “Teaching Design in Technical Fields: A report from the Software Design Studio.” The 1996 Spring Colloquia, Program in Science, Technology, and Society. Massachusetts Institute of Technology, Cambridge, MA.
- 1996 “The Software Design Studio.” Human-Computer Interaction group, Computer Science Department. Stanford University, Palo Alto, CA.
- 1995 “Is Software Design Design?” Organizer and Moderator, Roundtable Discussion featuring Mitchell Kapor, founder of Lotus Development Corporation, and William Mitchell, Dean of Architecture and Planning. Massachusetts Institute of Technology, Cambridge, MA.
- 1994 “Engineering Education and Engineering Practice: Improving the fit.” (with L. L. Bucciarelli). Cornell University, Conference on Technical Work and the Technical Labor Force. Ithaca, N.Y.
- 1993 “Challenges of Interdisciplinary Design.” Departmental Colloquium, Computer Science Department, University of Massachusetts Lowell.
- 1991 “The Software Engineer: Mathematician or Anthropologist?” Mathematics and Computer Science Department, Colby College. Waterville, Maine.
- 1987 “Service Sector Jobs and the New Technology: The Case of Computer Programming.” Goethe Institute Boston, The Future Need for Skilled Labor and the Implications for the System of Education and Training: The Experience in West Germany and the United States. Boston, MA.

1987 “Restructuring of Information Systems Work.” Industrial Relations Seminar. Sloan School of Management, Massachusetts Institute of Technology. Cambridge, MA.

c) Industry, Labor, and Community presentations—invited

2022 Community Conversations: Improving Education by “Thinking with Things.” Maker Campus virtual event. March 3 on Zoom.

2019 Crocheted Hyperbolic Planes: An existence proof. Host, The Living Room Project, Isabella Stuart Gardner Museum. March 29, 2019.

2015 “Thinking With Things: Remaking Learning in College and Beyond.” Maker Media, San Francisco, CA. 18 March 2015.

2007 “Thinking With Things: Using Low Tech Tools for High Tech Goals.” The MITRE Corporation. February 17.

1997 “Lessons for Software Architects from the Software Design Studio.” Digital Equipment Corporation. Nashua, NH.

1996 “The Software Design Studio: Implications for Design and Education.” Xerox Palo Alto Research Center (PARC), Design Studies Group, Palo Alto, CA.

1996 “The Software Design Studio: An Experiment in Design Education.” Institute for Research on Learning, Menlo Park, CA.

1994 Panelist, “Computers and Capitalism: Who Creates Unemployment?” Boston Computer Society, Computers and Social Change. Boston, MA.

1992 Participant. Workshop on Software Design, Stanford University. Monterey, CA.

1992 “Trends in the management of service industries.” (With Chris Tilly.) Service Employees International Union, Local 285. Boston, MA.

1992 “Understanding the Service Sector.” Harvard University Trade Union Program. Cambridge, MA.

1991 “Women and Computers.” Boston Computer Society, Computers and Social Change. Boston, MA.

c) Other Research and Creative Activities

- 2004 “Conversing with Materials.” Workshop for founding members of the Center for Balance by Design, Cambridge. June.
- 2002 “Conversing with Materials.” Convener. Colloquium of academics and professionals from many disciplines. Radcliffe Institute for Advanced Study. Four meetings in Fall semester.
- 2001 “Conversing with Materials” Co-convener, with Carol Strohecker, Mitsubishi Electric Research Laboratories. Colloquium of academics and professionals from many disciplines. Radcliffe Institute for Advanced Study. Three meetings in Spring semester.

D. INSTRUCTION RELATED ACTIVITIES

1) Teaching

2010-present

Course Title	Number of Sections	Graduate or Undergraduate
Program Evaluation	3	G
Seminar: Contemporary Trends	1	U
Seminar: Psychology of Education	3	U
Directed Study	1	U
Grant Writing	3	G
Designing the Future World (Gen Ed)	3	U
General Psychology	2	U
First Year Seminar in Honors (FYSH)	1	U

1998-2008

Course Title	Number of Sections	Graduate or Undergraduate
Software Design in Context	5	G
Qualitative Research Met	9	G
Sustainable Development	8	U
Introduction to Sociology	3	U
Designing the Future World	2	U
Managing Workforce Diversity	1	U
Radical Design	1	G

I was on sabbatical during academic year 2000-2001 and on research leave 2001-2002.

I was half time (half teaching load at half salary) during *calendar* year 2003.

1990-1997

Course Title	Number of Sections	Graduate or Undergraduate
Business, Society, and Public Policy	13	U
Managing Workforce Diversity	5	U
Software Design in Context	1	G
Enterprise and Management Dynamics	2	G
COMCORE (integrated business core)	1	U
Industrial Relations	1	U
Work, Technology, and Training	1	G
	1	U

2) Other Activities and Accomplishments Related to the Instructional Function

a) Project Work

2016- “Resource Person,” Liberal Studies in Engineering Project. This is an NSF-funded project to define and explore the feasibility of creating Liberal Studies in Engineering programs in US colleges and universities. Louis Bucciarelli, Professor Emeritus of Engineering & Technology Studies, MIT, and David Drew, Platt Chair and Professor of Education, Claremont Graduate University, Co-PIs.

2016 Host for NSF-funded Liberal Studies in Engineering Feasibility Study team visit, April 15. Planned topics and itinerary with study team, booked and attended meetings with Deans Falcon and Hartman, and convened a faculty lunch.

2005- Creator and Director of LID, the Laboratory for Interdisciplinary Design, in pres. Coburn Hall, South Campus. The Laboratory, which opened in Fall 2006, supports active learning through hands-on teaching, research, and project work for students and faculty from a variety of disciplines. It is open to all members of the university community.

2008 Student Sustainability Project Showcase, May 6, Cumnock Auditorium. Students from undergraduate and graduate classes at UML showed their class project work related to sustainability to the university community and to the public.

2008 Environmental Protection Agency P3 Project. Selected and supervised two undergraduates from my 57.220 Designing the Future World class to collaborate on an EPA-funded “Sustainability Dashboard” for the university composting

- project. Students traveled to Washington DC in May to exhibit their work on the National Mall along with other student grant winners.
- 2007 Student Sustainability Project Showcase, December 6, Alumni Lounge. Students from undergraduate and graduate classes at UML showcased their class project work related to sustainability. The public was invited and middle school students from the iCODE project also attended.
 - 2005-2006 Student Projects and Open House, Spring and Fall semesters 2005 and Spring 2006, with students in Sustainable Development (57.211.202). Students worked with a partner to create a programmable, interactive, device or construction linked to one or more of the topics of the course. Their device either a) addressed a solution to a problem or issue from the course or b) assisted in collecting data to better understand a problem. Students showed their projects at an Open House for the university and greater Lowell community.

b) Service Learning Projects

- 2012 Service Learning in Program Evaluation, 47.611. Students worked as a team, supervised by me, to design and implement program evaluation tools for the a nonprofit teen arts program at the Revolving Museum in Lowell.
- 2011-2014 Service Learning in Grant Writing, 47.546/57.546. Each student partnered with a community nonprofit organization to write a grant proposal that was ready for submission to an identified funding source. (Fall.)
- 1997 Pilot survey of employers' attitudes and practices about workforce diversity in the greater Lowell area, with informal presentation of findings, with students in Managing Workforce Diversity (65.353). (With Meg Bond and Jean Pyle.)
- 1995 Researched, wrote, and disseminated a report on enhancing diversity in the College of Management, with Students in Managing Workforce Diversity (65.353). Organized and oversaw students' oral presentation of their findings to faculty and students from the College.
- 1991 Researched and wrote a report on women in engineering programs at University of Massachusetts Lowell, with Students in Managing Workforce Diversity (65.353)

c) Professional Development and Faculty Institute Teaching Workshops Completed

- 2015 Workshop participant, "Creative Nonfiction Writing Tools for Academics." UML daylong workshop with Maureen Stanton, sponsored by the UML Center for Women and Work. May 6.

- 2016 Workshop participant, “Difference Makers Workshop” for faculty. UMass Lowell Innovation Hub. January 13.
- 2013 Participant, American Evaluation Association (AEA) two day pre-conference workshop “Building useful logic models for program evaluation and planning.” Tom Chapel, CDC, instructor. October 14-15.
- 2012 Participant, Lesley University Program Evaluation and Research Group (PERG) 3-day workshop series “Evaluating Your Program.” December 2011-May 2012
- 2011 Participant, “Meeting the Needs of the 21st Century: Designing for Student Engagement.” Olin College of Engineering Initiative for Innovation in Engineering Education. June 13-17, 2011, Needham, MA. (Attended as a team with David Kazmer.)
- 2006 “Developing Interdisciplinary Projects/Assignments”
- 2005 “Developing Interdisciplinary Assignments”
- 2003 “Assessing Our Assessments”
- 1997 “Developing a Teaching Portfolio”
- 1996 “Using the Course Syllabus as a Teaching Tool”
- 1996 “Electronic Information Resources for Research and Teaching.”

d) Other Activities and Accomplishments

- 2016 Directed Study for Charlette Renault-Caragianes (Spring)
- 2016 Guest lecturer, ENTR 300, an entrepreneurship foundation course taught by the Difference Makers staff.
- 2015- Reader on Doctoral dissertation committee for James Dalphond (Computer Science)
- 2015 Directed Study for Julie O’Neil (Spring)
- 2014 Reader on Doctoral dissertation committee for Priyadarshini Sengupta Dasgupta (Work Environment). Successfully defended April.
- 2014 Directed Study for Donna Hackley (Fall).

- 2014 Directed Studies for Mana Abdalla and Kimberly Haskins (Spring).
- 2008 Thesis Reader for Jonathan Arambula and Thomas Merrill.
- 2006 Thesis Reader for James Rather and Emily McCourt.
- 2005 Thesis Advisor for Jennie Morris; Thesis Reader for John Edward.
- 2004 Became LEGO® SERIOUS PLAY™ Licensed Facilitator.
- 2003 Graduate independent study on Qualitative Research Methods. Supervisor.
- 2002 Graduate independent study on Qualitative Research Methods. Supervisor.
- 1998 Invited Outside Guest, Software Development Studio Final Reviews. Master of Software Engineering program at Carnegie Mellon University. July.
- 1997 Dissertation committee member for Hyxia Villegas, “A Study of Awareness-Enhanced Tools for Collaborative Debugging.” Doctoral thesis in Computer Science Department, University of Massachusetts Lowell.
- 1996 Three graduate independent studies on Software Design in Context (Fall.)
- 1993-1994 Member of College of Management's COMCORE team. Developed and taught, with five other faculty, the first integrated curriculum for junior business majors, funded by the US Department of Education’s Fund for the Improvement of Postsecondary Education (FIPSE).
- 1991 Undergraduate independent study on international software marketing (Fall).

D. SERVICE ACTIVITIES

1) National/Community Activities Related to Professional Field

- 2022 Sarah Kuhn. “Crocheting the Hyperbolic Plane.” Massachusetts College of Art Continuing Education Workshop. January 5, 2022. 6-8 PM.
- 2019 Sarah Kuhn. “Crocheted Hyperbolic Planes.” Workshop at Arts League of Lowell. August 6.
- 2017 Sarah Kuhn. “How to make a Crocheted Hyperbolic Plane: STEM meets fiber.” Women and Textiles Expo, Loading Dock Arts Gallery, Lowell, MA. March 11.
- 2015- Sarah Kuhn, PI. “Lowell Tex: Embracing Lowell’s Cultural, Historical, and

- 2016 Educational Assets to Create Pathways to STEM.” Supported by a \$34,500 grant from the UMass President’s 2015 Creative Economy Initiatives Fund.
Co-investigators: Chris Hansen, Engineering; David Kazmer, Engineering and UTeach; Ken Levasseur, Mathematics and UTeach; Emmanuelle Reynaud, Engineering; Michelle Scribner-MacLean, Education and UTeach; Sheila Kirschbaum, Tsongas Industrial History Center; Diana Coluntino, New Vestures Fashion Maker Space; Todd Smith, American Textile History Museum; and Chriztine Foltz, Patricia Wilson Nguyen, and Alessandrina Costa, fiber arts experts.
- 2005- Member (invited), Social Science Advisory Board. National Center for Women pres. in Information Technology (NCWIT), University of Colorado Boulder. Funded by the National Science Foundation, the Center’s goal is to ensure that women are fully represented in the professional information technology (IT) workforce. Education, promotion and dissemination of research and promising practices, and advocacy are the Center’s primary activities.
- 1998- Committee Member, Don Schön Award for Excellence in Learning from pres. Practice, Association of Collegiate Schools of Planning and Department of Urban Studies and Planning, Massachusetts Institute of Technology.
- 2016 Consultant to UTEC Lowell. Goal is to identify value-added and sustainable uses for materials generated by their mattress recycling youth training operation.
- 2015- Committee Member, Dr. Eleanor Campbell Scholarship Fund. Deering-Weare, pres. NH. The committee selects excellent high school seniors and college students for college scholarships.
- 2015 Worked with Lowell Maker Spaces *New Vestures* and *Lowell Makes* to provide feedback on their grant proposals to Massachusetts Development Finance Agency Transformative Development Fund and Initiative (TDI: Cowork). Both community partners were successful in their applications for build-out funding (roughly \$150,000 per partner).
- 2012 “Hyperbolic Crochet.” Mill City Skill Share workshop presenter, Lowell MA. May 6.
- 2008 Radio Guest, “Morning Edition.” WBUR Boston. Interviewed 1-25-2008 by Bob Oakes for future broadcast of segment on “The Future of Work in Massachusetts.”
- 2005 Radio Guest, “Sunrise” on WUML. Discussion of “Thinking with your Hands,” about the use of Lego and other materials in the classroom.

- 2002 Reviewer, External Review Committee, Product Design and Innovation Program, Rensselaer Polytechnic Institute, Troy, New York. Funded by the National Science Foundation.
- 1999 National Research Council. Committee Member, "Workforce Needs In Information Technology." Contributor to the committee's report, "Building a Workforce for the Information Economy" (National Academy Press, 2001)
- 1996 Nominated Mitchell Kapur for an honorary degree at University of Massachusetts Lowell. The degree was awarded in 1997.
- 1996 "United Nations of Framingham." Letter to the Editor, Middlesex News.
- 1995 Call-in guest, National Public Radio's Talk of the Nation with Ray Suarez. "Advocacy in the Classroom."
- 1991- Member, Massachusetts Institute of Technology Community Economic
1993 Development and Finance Program Advisory Committee.
- 1980- Economist/Presenter, Women's Economic Literacy Project. Women for
1991 Economic Justice, Boston, MA.

2) University Based Professional Service

- 2017- Member, UML team working on the AFFOA and Fabric Discovery Center research and workforce development programs, which grew out of the Revolutionary Fibers and Textiles-Manufacturing Innovation Initiative proposal. I continue to be the only South Campus member of the team; the rest are scientists and engineers.
- 2017 Coburn Hall planning committee. Worked with staff, architects, and departmental stakeholders on plans for the expansion and renovation of Coburn Hall. I was involved with general discussions of overall approach, and I particularly focused on plans for the Innovation Space.
- 2016- Director, Technology, Society, and Human Values Minor, University of
2017 Massachusetts Lowell.
- 2016 Purchased and set up complex, semi-automated 16-harness loom in Engineering Maker Space. Expected uses are advanced materials research and student instruction.
- 2005- Faculty Associate, Center for Women and Work. Responsibilities include
pres. conducting research related to women and work, mentoring faculty, supporting the work of the Center, and building community awareness about the Center.

- 2015- Affiliate, UML Center for Program Evaluation.
pres.
- 2006- Lead Instigator, Laboratory for Interdisciplinary Design (Coburn B7).
pres.
- 2015- Psychology Department Representative, FAHSS Difference Makers.
pres.
- 2017 Facilitator, UMass Lowell Women in Leadership Conversation Dinner. For UML Women student leaders, organized by the Center for Women and Work. February 16.
- 2016 Facilitator, UMass Lowell Women's Student Leadership Summit. April 21.
- 2009- Leader, Thinking With Things, an interdisciplinary, teaching-focused faculty
2012 learning community
- 2007 Creator and organizer, *Student Sustainability Project Showcase*. Conceived and organized December public open house showcasing Sustainability-related student projects for students from all levels and disciplines at UML.
- 2007 Founding member of CIRCLe, the Center for Interactive Robotics, Computing, and Learning. The proposed Center, awarded a two year, \$120,000 grant from the UMass President's Office, is directed by Holly Yanco, with Fred Martin, Georges Grinstein, and MITRE Corporation's Jill Drury.
- 1996 Secured equipment donation. EDS Corporation donated to the university the equipment to create an electronic conference room/classroom, including networked computers, electronic projectors, audio and video recording and editing equipment, and proprietary software. Donation conservatively valued at \$175,000. (With Marian Williams.)
- 1995 Created Graduate Certificate Program in Human-Computer Interaction at the University of Massachusetts Lowell (with Marian Williams).

3) Committee Activities

a) University Committees

- Member, University Rank and Tenure Committee (2011-2012, 2014-2015)
- University of Massachusetts Information Technology Council Subcommittee on Academic Technology Working Group on Faculty Engagement and the Scholarship of Teaching (2005-2006)
- Media, Information, and Technology Program Committee 2005-2006
- Advisory Committee, Initiative on Experimental Educational Design 2004-2005

Committee on the Relationship Between Electrical Engineering/Computer Engineering and Computer Science in Order to Enhance the Skills and Value of Lowell Graduates in these Disciplines 2001-2002
Committee for Industrial Theory and Assessment, 1993-2000
Telecommunications Council, 1996-1998
Telecommunications Committee, 1994-1995
Scholarship Study Team, 1993-1995
Council for Industrial Development, 1993-1995

b) College Committees

Chair, Social Science (College level) Personnel Committee (2011-2012 and 2014-2015)
Member, Faculty Group, Interdisciplinary Masters Program in the Economic and Social Development of Regions (2010-2012)
College of Management Commencement Committee 1994, 1995
College of Management Centennial Committee 1994
College of Management COMCORE Committee 1993-94
College of Management Graduate Programs Committee 1990-91, 1992-93, 1994-95
College of Management Undergraduate Programs Committee 1991-92
College of Management Master of Management Science Committee 1991-92
College of Management Instructional Innovation Committee 1991-92

c) Department Committees

Department of Psychology (September 2010-Present).

Chair, Personnel Committee (2010-2012, 2014-2015)
Member, Graduate Programs Committee (2010-2012) and GPC-C (2012-present)
Faculty Senator, representing Psychology Department (2011-2012)
Department Representative, Honors Council (2011-2012)

The **Department of Regional Economic and Social Development** began its official existence in July, 1997. I am one of the 13 founding faculty of the department. During 1996-97, I worked actively with my colleagues to create the department and to plan and implement its curriculum. Much of the work of forming the new department was done by a “committee of the whole.” Specific accomplishments include:

- Overseeing the development of the department’s graduate certificate program in the economic and social development of regions;
- Co-leader of department space committee and liaison to design consultant;
- Liaison and maintainer of department’s Web site and electronic communications infrastructure 1999-2000

- Participant in student recruitment
- Graduate Program Committee member
- Undergraduate Curriculum Committee member
- Member, Graduate Curriculum Committee
- Member, RESD 10th Anniversary Committee
- Coordinator for development of Complete Engineer scholarship
- Arranged with Computer Science department for approval of undergraduate Sustainable Development course as ethics elective.
- Space planning and evaluation work with colleagues, students, and facilities director.

Policy and Planning, my department from 1990-1997, had no formal committee structure. I shared equally with my colleagues the work of creating and maintaining the new department, including but not limited to: recruitment, curriculum development, seminar planning, mission formulation, and long-range planning for the department from its founding in 1990 to its dissolution in 1997.