Jonathan Michael Spector – VITA

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PERSONAL DATA

Citizenship: USA
Place of Birth: Pensacola, Escambia County, Florida, USA

EDUCATION

1978 Ph.D., Philosophy (Epistemology/Logic)
The University of Texas @ Austin, TX, USA

1967 B.Sc., International Affairs (Psychology/Philosophy)
United States Air Force Academy, CO, USA

PROFESSIONAL EXPERIENCE

2014 – present   Professor, Department of Learning Technologies, College of Information, UNT
2012 – 2014   Professor and Chair, Department of Learning Technologies (LT), College of Information, University of North Texas (UNT), Denton, Texas
2009 – 2011   Professor, Department of Educational Psychology and Instructional Technology (EPIT); Research Scientist, Learning and Performance Support Laboratory (LPSL); Doctoral Program Coordinator, Learning, Design and Technology (LDT); The University of Georgia, Athens, Georgia
2004 - 2008   Associate Director, Learning Systems Institute (LSI), & Professor, Educational Psychology and Learning Systems, Florida State University, Tallahassee, Florida
Responsible for research in learning and instruction at LSI and graduate teaching in Instructional Systems
2000 - 2004   Professor and Chair, Instructional Design, Development & Evaluation (IDD&E), Syracuse University, Syracuse, New York
Responsible for leading the educational technology graduate program at Syracuse University
1997 - 2000   Professor and Director, Educational Information Science & Technology Research Program, University of Bergen, Norway; Professor II at Agder University College, Norway and at Göteborg University, Sweden; Adjunct member of the graduate faculty at the University of Minnesota, USA
Responsible for facilitating and supporting research and development in advanced learning environments to improve learning and instruction at the University and with collaborating institutions
1991-1997   Senior Scientist (GM-13, GS-14, GS-15)
Instructional Systems Research Branch USAF Armstrong Research Laboratory
Technical advisor and senior research team leader for research and development programs in training and educational technology with an emphasis on intelligent performance support for instructional design and development.
1984 - 1991 Assistant/Associate Professor
Department of Mathematics, Computer & Information Sciences
Jacksonville State University, AL
Taught undergraduate and graduate courses in computer science, artificial intelligence, and software engineering. Member of the graduate faculty; faculty handbook committee
1983-1984   Senior Systems Programmer
Tower Telescope, National Solar Observatory, NM

Created and maintained software systems for the tower telescope; designed software to enhance performance and for new equipment
1981 - 1983   Systems Analyst

Cubic Corp., ACMI Site, Holloman AFB, NM
Maintained software systems related to the operation of the Aircrew Combat Maneuvering Instrumentation (ACMI) system -- a real-time, multi-tasking system involving six mini-computers and approximately 400 programs. Responsibilities included installation, test, maintenance, and modifications

1978 - 1981	Instructor
	Philosophy Department
	El Paso Community College, TX
	Taught Introduction to Philosophy, Formal Logic, Informal Logic, and Ethics
1972 - 1978	Lecturer
	Department of Philosophy
	The University of Texas @ Austin, TX
	Taught Formal Logic and Ethics
1971-1972	Volunteer Teacher, Sherut La'am
	Kiryat Shemona, Israel (on leave of absence from IBM)
1970 - 1972	Junior Analyst
	IBM SDD Laboratory, Boulder, CO
	Tested software and wrote User's Guide for the Data Processing Utilization System
1967 - 1970	Intelligence Officer
	13th Air Force, Clark AB, Philippine Islands
	Watch Officer responsible for analyzing classified and coded message traffic

SPECIAL SCHOOLING

1999	Java Tools and Technologies I (1 week)
	Massachusetts Institute of Technology, Cambridge, MA
1991 - 1993	Systems Acquisition & Systems Engineering
	Advanced Professional Development Levels I, II, & III
1989	Digital Video (DVI) Workshop (1 week)
	Carnegie-Mellon University, PA
1987	Advanced Ada Workshop (1 week)
	Keesler AFB, MS
1985	Ada Programming Workshop (1 month)
	Mississippi State University, MS
1984 - 1986	Graduate Work in Computer Science (18 credits - 6 courses)
	The University of Alabama in Birmingham, AL
1981 & 1983	Perkin-Elmer OS-32, Assembly Language I & II, and I/O Systems (4 weeks)
	Orange Grove, CA
1970	OS 360, Assembly Language, COBOL, FORTRAN, RPG II, PL/I (3 months)
	IBM Programming School, Kansas City, MO
1967 - 1968	Air Intelligence Officer Training (9 months)
	Lowry AFB, CO

PROFESSIONAL SERVICE & ACTIVITIES

2020	Interim Associate Dean for Research and Development, College of Information
2020	Conference General Chair, 3rd Pan-Pacific Technology-Enhanced Language Learning & Critical Thinking Conference
2018 -	Faculty Advisor, International Graduate S
2018 -	Member of the NATO-AECT Steering Committee Research Organizaation
2018 -	Chair of the Learning Technologies Faculty Search Committee
2018 -	Member of the UNT Faculty Senate Faculty Policy Oversight Committee
2015-	Member of the Scientific Advisory Board for the NSF Funded Center for Bio-mediated and Bio-inspired Geotechnics
2015-	Member of the Science Advisory Board for Education, Smithsonian Institute
2016	International Mobile Learning Festival, Bangkok, Thailand, May 2016, International Program Committee

2015	GaLA (Game and Learning Alliance) Conference, Rome, Italy, December 2015, Program Co-Chair
2015- 2018	UNT Administrator Evaluation Committee
2014 -	*Journal of Communication and Education,* International Advisory Board
2014 -2014	UNT Provost's Policy Writing Group
2013 -	*Technology, Knowledge and Learning*, Editorial Board
2013 -	*Interactive Technology and Smart Education*, Advisory Board
2013 -2014	UNT Provost's Retention Management Committee and Graduate Subcommittee
2013 -	International Association for Smart Learning Environments, Executive Board Member and Board of the *International Journal of Smart Learning Environments*
2013-2015	Visiting Professor, University of Hong Kong
2013-2015	Academic Icon, University of Malaya, Kuala Lumpur, Malaysia
2013	Conference Chair and Local Organizer, Cognition and Learning in the Digital Age (CELDA), Fort Worth, TX, 22-25 October 2013
2013	Guest editor, *Turkish Online Journal of Educational Technology*
2012 -	Program Committee, International Conference on Computer Supported Education (CSEDU)
2012 -	New Initiatives Chair, IEEE Learning Technology Technical Committee
2011 -	Editorial Advisory Board, *Knowledge Management & E-Learning* (KM&EL)
2011-	Evaluator, Natural Science and Engineering Research Council of Canada
2011 -	Evaluator, Singapore National Institute of Education
2011	Conference Co-Chair and Local Organizer, International Conference on Advanced Learning Technologies (ICALT 2011), Athens, GA, 6-8 July 2011.
2011 -2014	Evaluator for the European Commission's Network of Excellence in Serious Gaming (GaLA)
2011 -	*International Journal of Digital Literacy and Digital Competence*, Associate Editor
2010 -	Editorial Board, *International Journal of Educational Media and Technology* (IJEMT)
2010 -2011	Chair, Technology, Instruction, Cognition and Learning SIG, AERA
2009 - 2010	President, Association for Educational Communications and Technology
2008 – 2012	External evaluator, The European STELLAR Project (Network of Excellence in Technology Enhanced Learning)
2008 - 2010	External evaluator for the Scientific & Technological Research Council of Turkey (TUBÍTAK), Evaluation of Mental Models Project #108K294
2008	Research Community Advisory Committee, International Conference on Computers in Education (ICCE); AECT President-elect
2007	Elected President-elect designee, Association for Educational Communications and Technology (AECT; election conducted in 2008; term activates in November)
2007 - 2009	Associate Director, Interdisciplinary Center for Leadership, Technology Integration and Critical Literacies (I-CELTIC), Florida State University
2007 -	Editorial Board, *International Journal of Management and Decision Making*
2007- 2009	Affiliate Faculty, Socio-cultural and International Development Education Studies (SIDES), Florida State University
2007 -	Editorial Board, *International Journal of Cyber Society and Education*
2007-	Reviewer, *Scientific Journals International*
2007	Grants Evaluator, Norwegian Research Council
2006 - 2008	Scientific Committee, International Conference of the Learning Sciences
2006 -	Scientific Program Committee, TENCompetence (European project)
2005 -	Organizing Committee, Cognition and Exploratory Learning in the Digital Age (CELDA)
2005 - 2007	Member, Advisory Board, School Library Media Specialists for the 21st Century: Leaders Educated to Make a Difference (Project LEAD)
2005	Guest co-editor of special issue of *Evaluation and Program Planning* on organizational learning
2004 -	Member, IEEE Executive Committee for the Technical Committee on Learning Technology
2004 -	Reviewer for the Research Council of Canada
2004 -	Reviewer for the Italian National Research Council
2004	Co-chair, New Learning 2004, 10-12 May 2004, Skiathos, Greece
2004 -	Scientific Committee, International Association for Development of the Information Society (IADIS); reviewer for many IADIS conferences
2004	Conference on E-Learning in the Digital Age Program Committee and keynote speaker
2004 -	Member, International Scientific Advisory Committee, Internet Society
2004 -	Editorial Advisory Board, *Journal of Educational Sciences and Practice* (*ebuline*)
2004 -	Contributing Editor, *Educational Technology*

2003 -	Editor, *Educational Technology Research & Development-Development*
2003 - 2004	Associate Director, Center for Digital Literacy, Syracuse University
2003 -	Editorial Advisory Board, *Media and Technology for Human Resource Development*
2003 –	Co-chair, IEEE International Conference on Advanced Learning Technologies (ICALT)
2003	Invited reviewer, Special issue of *Educational Psychologist* on Cognitive Load Theory, Volume 38, Number 1
2003	Guest co-editor, Special issue of *Evaluation and Program Planning* on Evaluating Educational Technology, EPP, Volume 26, Number 2
2003	External program reviewer, Instructional Psychology & Technology, BYU
2003 -	Editorial Review Board, *International Journal of Web Based Communities*
2002 -	Advisory Board, *Education, Technology and Society*
2002 -	Editorial Board, *Technology, Instruction, Cognition and Learning*
2002 - 2004	President-elect/President/Past President of the Design & Development Division of the Association for Educational and Communications Technology (AECT)
2002 -	Editorial Review Board*, Research in Management Education and Development*
2002	ETS consultant – competencies for online teaching
2001 -	Editorial Board, *Distance Education*
2001-	Advisory Board, New York State Preparing Tomorrow's Teachers to Use Technology (PT3) Catalyst Grant Program
2001	NSF Evaluation panel member – Research on Learning and Education
2000 -	Governing Council, School of Information Studies, Syracuse University
2000 -	Editorial Board, *Evaluation and Program Planning*; co-editor of a special issue on evaluating educational technology in 2002
2000 -	Reviewer for the International System Dynamics Conference
2000	Guest Editor, 3 Special Issues of *Simulation & Gaming* on System Dynamics Based Learning Environments
1997 - 2000	Norwegian representative to the European Knowledge Media Association
1997 - 2000	Book Review Editor, *Research Dialogue*, European Association for Learning and Instruction (EARLI)
1996 - 2005	Member, Treasurer, Executive Vice President, Fellow, International Board for Standards in Training, Performance and Instruction (*ibstpi*)
1996 -	Reviewer, *Educational Computing Research*
1995 - 1999	Co-founder*, International Consortium for Courseware Engineering*, served Secretary from 1995 - 1997; elected President 1997
1994 -	Editorial Board, *Computers in Human Behavior*; guest editor of special issues in 1996 and 1997
1994 -	Reviewer/Board Member, *Educational Technology Research & Development*
1994 - 1999	Lecturer, Institute for Courseware Engineering (Univ. of Minnesota); adjunct member of the graduate faculty at the University of Minnesota
1994 - 1999	Mentor, Air Force Palace Knight Program
1993 - 1999	Mentor, Air Force Graduate Fellowship Program
1993 - 1999	National Research Council Advisor
1993 -	Editorial Board, Book Review Editor, Associate Editor *Instructional Science*
1993 - 1996	Association for the Development of CBI Systems (ADCIS)
1993 -	Reviewer, *Educational Research Quarterly*
1993 - 1997	Advisor, [D]ARPA Defense Technology Transition
1992 - 1997	Sponsor, Air Force Windows on Science Program
1992 - 1999	Organizer & Charter Board Member, *Training Research Journal*
1992 - 1995	Advisor, USAF Synthetic Environments Group
1987 - 1991	Vice President, Direct Filers (Electronic Filing to IRS), Anniston, AL
1990 - Present	Reviewer:
	American Association for Educational Research (AERA)
	Association for Educational and Communications Technology (AECT)
	Computers in Human Behavior
	ED-MEDIA
1990 - 1995	Reviewer:
	Artificial Neural Networks in Engineering
	Journal of Computer-Based Instruction
	Military Psychology
	I/ITSEC Training Development & Delivery Review Committee

1986 - 1991	Member, Graduate Faculty
	Jacksonville State University
1985 - 1990	Software Engineering and Computer Consultant for:
	Research Dynamics (Database Management System), San Antonio, TX
	Air Force Human Resources Laboratory (ISS Analysis), Brooks AFB, TX
	City of Jacksonville (Computer Requirements Analysis), Jacksonville, AL
	EGA, Inc. (Inventory Control System), Ft. McClellan, AL
	J. B. LaGarde Cement, Inc. (Integrated Software), Anniston, AL
1987 - 1988	President, Cheaha Chapter
	Data Processing Management Association (DPMA)
1984 - 1988	Workshop Leader:
	Introduction to Ada (2 weeks), Ft. Rucker, AL
	PROLOG (1 week), Kenneth E. Johnson Research Center, Huntsville, AL
	LOGO & SuperPilot, JSU In-Service Training Center, Jacksonville, AL
1987 - 1988	Board of Directors, Alabama Council for Computer Education (ACCE)
1987	Chair, Faculty Handbook Committee, Jacksonville State University

PROFESSIONAL AFFILIATIONS

Association for the Advancement of Computing in Education (AACE)
American Evaluation Association (AEA)
Association for Educational and Communications Technology (AECT)
American Educational Research Association (AERA)
American Philosophical Association-Lifetime Member (APA)
European Association for Research in Learning and Instruction (EARLI)
Institute of Electrical and Electronics Engineers-Computer Society (IEEE/CS)
International Association for Development of the Information Society (IADIS)
International Association of Science and Technology for Development (IASTED)
International System Dynamics Society (SDS)
National Technology Leadership Coalition (NTLC)

CONTRACTS AND GRANTS

NSF proposal pending: Building STEM Capacity at the Middle School Level ($1.3M; ITEST).

NSF IUSE Collaborative Research: Distributed Learning Undergraduate Programs in Data Science from Diverse Universities (PI; $309,188).

NetDragon Digital Research Centre Grant to develop critical thinking skills in young children (ongoing).

NSF iUSE grant hosted at Adams State University (2016-2019) serving as evaluator and instructional design advisor.

UNT Charn Uswachoke International Development Fund award (2017; $4,000).

NSF Cyberlearning Capacity Building Grant: Early Career Workshop at ICALT 2016. (2016-2017; $21,854; Principal Investigator)

NSF Engineering Research Center for Bio-mediated and Bio-inspired Geotechnics (CBBG) (2015-2025; $325,000,000 at Arizona State University; member of the Scientific Advisory Board)

NSF and Smithsonian supported project entitled "Lab School for Manufacturing Technologies at the University of Virginia" (2015-2017; member of the UVA/Smithsonian Advisory Board for the project)

UNT Global Discovery Grant (2015; Principal Investigator, $10,000)

UNT CAC Grant – Chinese Advisory Council grant to develop collaboration with East China Normal University (2014; Principal Investigator, $3,300)

NSF TUES Grant – Coalition for Undergraduate Computational Science & Engineering Education (2013-2014; Consultant and Evaluator)

US DOE i3 Grant – EngageMe-PLEASE (Personalized Learning Experiences Accelerate Standards-based Education) (2010-2014; $4,800,000; Co-PI and leader of the research and evaluation team)

President's Venture Fund – Support for the Conference Chair of ICALT 2011 (2010-2011; $5,000)

Georgia Professional Standards Commission – Building Resources: Induction and Development for Georgia Educators (BRIDGE) (2008-2009; $11,000)

FSU International Center for Educational Leadership, Technology Integration and Critical Literacies (ICELTIC) (2007-2012; $640,000; Co-PI)

Air Force Research Laboratory – Feasibility of Modeling the Impact on Individual and Organizational

Performance of Technical Training in IMPRINT for 21st Century Air Force Needs (2007-2008; $321,000; PI).

Texas Instruments – Initial Use of the TI-Nspire with Florida Middle School Students (2007; $10,000; PI).

US Department of Education - Comprehensive School Reform in Rural K-8 Schools in the Southeast: Integrative Technologies for Quality Initiatives (2006-2010; $2,250,000; PI).

JXT/US Navy – Conventional Training versus Game-Based Training (2006/2007; $30,000; key investigator at FSU).

JXT/USAF – Improved Performance Research Integration Tools (IMPRINT) Training Algorithm Enhancements for Maintainers (2006-2008; $270,000; key investigator at FSU).

Florida State University Cornerstone Social Science Program Enhancement Grant – International Center for Learning, Education and Performance Systems (ICLEPS) (2006/2006; $100,000; PI).

Florida State University Council on Research and Creativity – Interdisciplinary Center for Technology Integration and Critical Literacies (I-CELTIC) (2006; $25,000; Co-PI)

Norwegian Research Council: Improving Security by Improving Data Quality & Use (2006; 75,000 NOK; co-investigator).

Department of Homeland Security: Center for the Study of High Consequence Event Preparedness and Response (PACER) (2006-2011; PI for the Higher Education Effort with John Hopkins University as the lead institution; $15M for first three years).

Department of Homeland Security: Port Security Training Research and Development (2005-2007; Co-PI, $6.18M).

USAID-Indonesia Improved Quality of Decentralized Basic Education: Improved Quality of Teaching and Learning ($65M, 2005-2010; Co-PI)

Project LEAD: School Library Media Specialists for the 21st Century: Leaders Educated to Make a Difference (2005; Advisory Board)

NSF 03-542 Enhanced Evaluation of Learning in Complex Domains (2003/2004; Principal Investigator; $350,000)

NSF 03-530 Students Using NSDL (SUN): Science Information Literacy and the NSDL (2003/2004; Advisory Board)

Mellon Foundation Grant: Cost and Learning Effects of Alternative e-Collaboration Methods in Online Settings ($112K, 2001-2002, Principal Investigator)

Syracuse University Vision Grant: Innovative Interdisciplinary Collaboration Between the School of Education and the School of Information Studies ($24K, 2001, Co-PI)

European IST 5th Framework ADAPT-IT Project: Training Design Methods & Tools, ($10M, 1999-2002, Project Partner)

Norwegian Digitale Læremidler Working Group: Web-based Learning, ($500K, 1998-2000, Project Coordinator)

European Commission grants with EIST: EuroLiterature, OrthODL, Young Mothers (Project oversight and scientific advice)

Meltzer Research Foundation at UiB: OrthODL-In-Use (1998), OrthoLine (1999),Travel Grant (1998)

Norwegian Research Foundation grants with EIST: DOCTA (1998)

Air Force Office of Scientific Research grant for research workshop at the University of Bergen on Environmental Education ($5K, 1998)

Applying System Dynamics to Modeling Instructional Design Projects, Agder College/Univ. of Minn./Armstrong Lab, $12K, Grimstad, Norway (Jun 1994)

Automating Instructional Planning & Production, NATO Advanced Study Institute, $87K, Grimstad, Norway (Jul 1993)

Automating Instructional Design, Development, & Delivery, NATO Advanced Research Workshop, $25K, Barcelona, SP (Mar 1992)

University Resident Research Program Grant (AFOSR),   Air Force Human Resources Laboratory, TX $180K (1989-1991)

Air Force Research Initiation Program Grant (AFOSR), Air Force Human Resources Laboratory, TX, $22K (1989)

Air Force Summer Research Fellowship (AFOSR), Air Force Human Resources Laboratory, TX, $15K (1988)

JSU Faculty Research Grant (Database Repository), Jacksonville State University, AL, $5K (1987-1988)

PROFESSIONAL HONORS AND AWARDS

2023 -   Named as a Regents Professor at the University of North Texas

2017   Technology, Instruction, Cognition and Learning Outstanding International Research Collaboration

Award, AERA
2013 – UNT Leadership Fellow
 2014
2013   Academic Icon, University of Malaya
2012   J. Michael Spector Appreciation Award
2011   AECT Distinguished Service Award
2008 –
 2011   AECT President-Elect, President, Immediate Past-President
2006   AECT Annual Achievement Award
2006   Fellow, International Board of Standards for Training, Performance and Instruction
2005   Fellow, Learning Development Institute
2005   AECT Outstanding Book Award for *Instructor Competencies: Standards for Face-to-face, Online and Blended Settings*
2002   *ETR&D-Research* Reviewer Award
1995 -
 1996   Fulbright Research Fellow, University of Bergen, Norway
1996   Air Force Association Outstanding Civilian Senior Manager of the Year
1996   Federal Laboratory Consortium Award for Excellence in Technology Transfer
1993   Air Force Association Scientist of the Year
1993   NATO Advanced Study Institute Organizing Committee
        Automating Instructional Planning & Production
1992   NATO Advanced Research Workshop Organizing Committee
        Automating Instructional Design, Development, & Delivery
1992   Armstrong Laboratory Civilian of the Quarter
        Brooks AFB, TX
1991   Nomination for Best Paper, November 1991, Orlando, FL
        Technology and Innovation in Training and Education Conference
1991   Citation for Best Paper, April 1991, Chicago, IL
        American Education Research Association Annual Meeting
1991   Armstrong Laboratory Civilian of the Quarter
        Brooks AFB, TX
1990   Invited Participant, NATO Advanced Study Institute
        Instructional Computing Systems, Calgary, Canada
1989   Distinguished Research Award
        Jacksonville State University, AL
1972-
 1978   Teaching Assistantship/Fellowship
        The University of Texas @ Austin, TX
1970   IBM Honor Graduate (First in Class)
        IBM Programming School, Kansas City, MO
1967   Distinguished Graduate
        United States Air Force Academy, CO
1967   Brockway Philosophy Award
        United States Air Force Academy, CO
1967   Civil Air Patrol Award
        United States Air Force Academy, CO

PROFESSIONAL PRESENTATIONS & INVITED SEMINARS

Spector, J. M. (1987, January). *An introduction to expert systems*. Paper presented at the Annual Meeting of the Alabama Council for Computer Education, Mobile, AL.

Spector, J. M. (1987, November). *Ada as a core programming language*. Tutorial presented at the First Annual Meeting of the Southeastern Small College Computing Consortium, Chattanooga, TN.

Spector, J. M. (1988, January). *Using LOGO to introduce LISP*. Paper presented at the Annual Meeting of the Alabama Council for Computer Education, Birmingham, AL.

Spector, J. M. (1988, January). *Using Turbo Pascal*. Paper presented at the Annual Meeting of the Alabama Council for Computer Education, Birmingham, AL.

Spector, J. M. (1988, May). *History and logic of neural networks*. Paper presented at the Jacksonville State University Workshop on Artificial Neural Networks, Jacksonville, AL.

Spector, J. M. (1988, July). *Using PROLOG to design expert systems*. Seminar presented at the Kenneth E. Johnson Research Center, Huntsville, AL.

Spector, J. M. (1988, July). *Automated tools in instructional design*. Presentation at the Navy Personnel Research & Development Center, San Diego, Ca.

Spector, J. M. (1988, November). *Ada as a first language*. Paper presented at the Second Annual Meeting of the Southeastern Small College Computing Consortium, Chattanooga, TN.

Spector, J. M. (1989, January). *Problem solving in LOGO*. Paper presented at the Annual Meeting of Alabama Council for Computer Education, Tuscaloosa, AL.

Spector, J. M. (1989, January). *Curriculum issues in computer science*. Session chaired at the Annual Meeting of the Alabama Council for Computer Education, Tuscaloosa, AL.

Spector, J. M. (1989, November). *Expert systems and instructional design*. Paper presented at the Third Annual Meeting of the Southeastern Small College Computing Consortium, Birmingham, AL.

Spector, J. M. (1990, February). *The logical limitations of neurocomputing*. Paper presented at the NASA/CCDS Auburn University Conference on Neural Networks, Auburn, AL.

Spector, J. M. (1990, March). *Designing an interdisciplinary AI course*. Paper presented at the First Annual Meeting of the South Central Small College Computing Consortium, Austin, TX.

Spector, J. M., Muraida, D. J., & Dallman, B. E. (1990, April). *Establishing instructional strategies for advanced interactive technologies*. Paper presented at the Twelfth Psychology in the DoD Symposium, Air Force Academy, CO.

Spector, J. M., & Muraida, D. J. (1990, November). *Modeling the process of automated instructional design*. Paper presented at the Military Testing Association Conference, Orange Beach, AL.

Spector, J. M., Kudla, N. R., & Mitchell, W. M. (1990, November). *Managing computer-based education and training*. Paper presented at the American Society of Mechanical Engineers Annual Meeting, Dallas, TX.

Spector, J. M., & Muraida, D. J. (1991, February). *Automating the design and delivery of computer-based instruction*. Paper presented at the Society of Applied Learning Technology Annual Meeting, Orlando, FL.

Spector, J. M. (1991, March). *Training technology in the military*. Special interest group session chaired at the Ninth CBT Conference & Exposition, San Antonio, TX.

Spector, J. M. (1991, April). *Methods for transferring results of innovative research in computer-based instruction to academia and industry*. Paper presented at the Second Annual Meeting of the South Central Small College Computing Consortium, Austin, TX.

Spector, J. M., & Muraida, D. J. (1991, April). *Analyzing user interaction with instructional design software*. Paper presented at the American Educational Research Association Annual Meeting, Chicago, IL.

Spector, J. M. (1991, August). *Automating instructional design strategies: Possibilities & limitations for military training*. Paper presented at the 9th International Conference on the Learning Sciences, Northwestern University, IL.

Spector, J. M. (1991, October). *Simulations in training*. Session organized and chaired at the Military Testing Association Meeting, San Antonio, TX.

Spector, J. M. (1991, November). *Forecasting and parameter estimation*. Session chaired at the Artificial Neural Networks in Engineering Conference, St. Louis, MO.

Spector, J. M., Muraida, D. J., & Connolly, C. A. (1991, November). *Using auditory presentations in CBT*. Paper presented at the Technology and Innovations in Training and Education Conference, Orlando, FL.

Spector, J. M., & Muraida, D. J. (1991, November). *An advanced instructional design advisor prototype*. Paper presented at the Technology and Innovations in Training and Education Conference, Orlando, FL.

Spector, J. M., & Muraida, D. J. (1991, March). *When CBT speaks: Guidelines for incorporating audio*. Paper presented at the Tenth CBT Conference & Exposition, Orlando, FL.

Spector, J. M. (1991, March). *Training technology in the military*. Special interest group session chaired at the Tenth CBT Conference & Exposition, Orlando, FL.

Spector, J. M. (1992, March). *Instructional design*. Session chaired at the Ninth international Conference on Technology and Education, Paris, FRANCE.

Spector, J. M., & Muraida, D. J. (1992, March). *The implications of technology for instructional design*. Paper presented at the Ninth International Conference on Technology and Education, Paris, FRANCE.

Spector, J. M. (1992, March). *Integrating instructional science, learning theory, and technology*. Paper presented at the NATO Advanced Research Workshop on Automating Instructional Design, Development and Delivery, Barcelona, SPAIN.

Spector, J. M., Gagné, R. M., Muraida, D. J., & Dimitroff, W. A. (1992, April). *Intelligent frameworks for instructional design*. Paper presented at the American Educational Research Association Annual Meeting, San Francisco, CA.

Spector, J. M., & Gros, B. (1992, July). *LOGO and instructional design*. Seminar at the University of Barcelona, SPAIN.

Spector, J. M. (1992, August). GAIDA and XAIDA: *Demonstrations of automated instructional design guidance*. Presentation at the Utah State University Summer Instructional Technology Institute, Logan, UT.

Spector, J. M., & Muraida, D. J. (1992, October). *Intelligent scaffolding for designing instruction*. Paper presented at the Military Testing Association Conference, San Diego, CA.

Spector, J. M. (1992, October). *Distance learning: Motivation to learn*. Closing presentation for the Distance Learning Symposium at the Military Testing Association Conference, San Diego, CA.

Spector, J. M. (1992, November). *Intelligent frameworks for instructional design*. Paper presented at the 14th Interservice/Industry Training Systems Conference, San Antonio, TX.

Spector, J. M., & Muraida, D. J. (1992, November). *An intelligent framework for the creation of effective computer-based instruction*. Paper presented at the Association for the Development of Computer-based Instructional Systems Conference, Norfolk, VA.

Muraida, D. J., & Spector, J. M. (1992, November). *Toward effective use of speech in CBI*. Paper presented at the Association for the Development of Computer-based Instructional Systems Conference, Norfolk, VA.

Spector, J. M. (1992, December). *Adaptive instructional design*. Presented at the Technology Advisory Group Conference, Phoenix, AZ.

Spector, J. M., & Jones, T. (1993, April). *An automated approach to instructional design guidance*. Paper presented at the American Educational Research Association Annual Meeting, Atlanta, GA.

Muraida, D. J., & Spector, J. M. (1993, April). *Automated approaches to instructional design*. Paper presented at the American Educational Research Association Annual Meeting, Atlanta, GA.

Spector, J. M. (1993, July). *Guided approach to instructional design advising (GAIDA)*. Paper presented at the NATO Advanced Study Institute, Grimstad, Norway.

Spector, J. M. (1993, July). *Towards an integration of instructional science and learning theory*. Paper presented at the NATO Advanced Study Institute, Grimstad, Norway.

Spector, J. M. (1993, November). *Models for effective use of distance learning technologies*. Paper presented at the International Society for Technology in Education TEL-ED 93 conference, Dallas, TX.

Spector, J. M. (1993, December). *Revolutions in automation and standardization of ISD: Guided approach to instructional design advising*. Paper presented at the 15th Interservice/Industry Training Systems and Education Conference, Orlando, FL.

Spector, J. M., & Whitehead, L. K. (1994, February). *A guided approach to instructional design advising*. Paper presented at the annual meeting of the Association for the Development of Computer-based Instructional Systems, Nashville, TN.

Spector, J. M. (1994, April). *Automating instructional systems*. Panel discussant at the annual meeting of the American Educational Research Association, New Orleans, LA.

Tennyson, R. D., & Spector, J. M. (1994, April). *Goals for automating instructional systems*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Spector, J. M. (1994, July). *Integrating principles and practices of instructional design*. Graduate seminar presented at the Institute of Courseware Engineering, Minneapolis, MN.

Spector, J. M. (1995, October). *Remarks on instructional design: Theory and research*. Graduate seminar presented for the Department of Computer and Information Science at the University of Linköping, Sweden.

Spector, J. M. (1995, October). *Instructional design: Theory and practice*. Graduate seminar presented for the Institute for Pedagogy at Göteborg University, Sweden.

Spector, J. M. (1995, October). *Performance support for instructional systems development: Problems and progress*. Seminar presented at the Department of Information Science, University of Bergen, Norway.

Spector, J. M. (1996, January). *Advances in instructional systems development: Automation and assistance*. Seminar presented at the Department of Information Technology, University of Twente, Norway.

Spector, J. M. (1996, June). *Creating engaging courseware using system dynamics*. Paper presented at the Annual ED-MEDIA Meeting in Boston, MA, 20 June 1996.

Spector, J. M. (1996, June). *The ISD project management tutor*. Paper presented at the Annual ED-MEDIA meeting in Boston, MA, 20 June 1996.

Spector, J. M. (1996, June). *Demonstration of the Advanced Instructional Design Advisor*. Paper presented at the Annual ED-MEDIA Meeting in Boston, MA, 20 June 1996.

Spector, J. M. (1996, June). *XAIDA: Where the expertise is*. Paper presented at the Annual ED-MEDIA meeting in Boston, MA, 21 June 1996.

Spector, J. M. (1996, July). *The complexity and dynamics of ISD*. Seminar presented at the Institute for Advanced Learning Technology at the University of Minnesota, Minneapolis, MN, 22 July 1996.

Spector, J. M., & Nielsen, M. (1996, July). *Instructional design project management*. Seminar presented at the Institute for Advanced Learning Technology at the University of Minnesota, Minneapolis, MN, 24 July 1996.

Spector, J. M. (1996, August). *Integrating instructional design with learning theory and instructional technology*. Seminar presented at the Institute for Advanced Learning Technology at the University of Minnesota, Minneapolis, MN, 1 August 1996.

Spector, J. M. (1996, August). *International differences in instructional design perspectives*. Presentation at the International Congress of Psychology, Montreal, Canada, 20 August 1996.

Spector, J. M. (1997, March). Intelligence Performance Support for Courseware Engineering. Presentation at the Annual Meeting of the American Educational Research Association, Chicago, IL, 25 March 1997.

Spector, J. M. (1997, March). Modeling the Dynamics of Large Scale Instructional Developments for Project Management. Presentation at the Annual Meeting of the American Educational Research Association, Chicago, IL, 27 March, 1997.

Spector, J. M., & Davidsen, P. I. (1997, August). *Cognitive complexity in system dynamics based learning environments*. Presented at the International System Dynamics Conference, Istanbul, Turkey, 21 August 1997.

Spector, J. M. (1997, September). *Managing cognitive complexity in simulation-based learning environments*. Presented at the Association for Learning Technology Conference, Telford, England, 16 September 1997.

Spector, J. M., & Davidsen, P. I. (1997, November). *Constructing interactive learning environments using system dynamics methods and tools*. Presented at the Norsk informatikkonferanse (NIK), Voss, Norway, 25 November 1997.

Spector, J. M. (1998, February). *System dynamics based learning environment*. Presentation at the International Masters Workshop at the Association for Educational Communications and Technology Annual Meeting, St. Louis, Missouri, 17 February 1998.

Spector, J. M. (1998, February). Discussant: *Distance education: Analysis of far/near-site interaction patterns*. Presented at the Association for Educational Communications and Technology Annual Meeting, St. Louis, Missouri, 19 February 1998.

Spector, J. M., Gonzalez, J. J., & Breuer K. (1998, April*). Tools and principles for the design of learning environments for complex domains*. Presented at the American Educational Research Association Annual Meeting, 13 April 1998, San Diego, California.

Spector, J. M. (1998, April). *Synthesizing instructional theories and implications for instructional technology*. Panel presentation at the American Educational Research Association Annual Meeting, 14 April 1998, San Diego, California.

Spector, J. M. (1998, April). *Multimedia design and evaluation guidelines: A learning perspective.* Invited talk and expert reviewer for the Swedish Council for the Renewal of Undergraduate Education's Workshop and Project Review, 19 – 29 April 1997, Umeå, Sweden.

Spector, J. M. (1998, June). *Cognitive complexity in decision making and policy formulation: A system dynamics perspective*. Presented at the International Conference on Competence-Based Management, Oslo, Norway, 19 June 1998.

Spector, J. M. (1998, June). *An Instructional Design Framework for System Dynamics Based Learning Environments*. Presented at the World Conference on Educational Multimedia and Hypermedia, ED-Media '98, Freiburg, Germany, 22 June 1998.

Spector, J. M. (1998, June). Panel chair, moderator, and discussant*: Constructive Engagement in Open and Distance Learning*. Presented at the World Conference on Educational Multimedia and Hypermedia, ED-Media '98, Freiburg, Germany, 22 June 1998.

Sioutine, A. V., Davidsen, P. I., & Spector, J. M. (1998, July). Modeling resource management in instructional system development projects. Presented at the Sixteenth International Conference of the System Dynamics Society, Québec City, Canada, 20 July 1998.

Babic, A., Karlsson, D., Wasson, B., Davidsen, P. I., Spector, J. M., Sancho, J., Ecoello, E., Hatschek, T., Sjodahl, J., & Wigertz, O. (1998, August). *TellMe: In Telemedical Support of Breast Cancer*. Presentation at MEDINFO 98, Seoul, Korea.

Spector, J. M., & Davidsen, P. I. (1998, August). *Simulation based learning environments*. Seminar at the ICO Fourth International Summer School, Göteborg University, Sweden.

Spector, J. M., Davidsen, P. I., & Sioutine, A. (1998, September). *Cooperative learning in system dynamics based learning environments*. Presentation at the British Psychological Society Education Section Annual Conference, Exeter University, UK.

Spector, J. M., Davidsen, P. I., Sioutine, A., & Bahaa, M. (1998, September). *Learner collaboration in simulation based environments*. Presentation at the Association for Learning Technology Annual Conference, Oxford University, UK.

Spector, J. M., Morgan, K., Vergari, A., Makochieng, M., Vold, V., & Wasson, B. (1998, November). *Collaborative Tele-Learning Designs and Architectures*. Presentation at the Annual Norwegian Informatics Society Meeting, Kristiansand, Norway.

Fields, D., Ritchey, R, & Spector, J. M. (1999, February). *The revised instructional design competencies*. Presentation at the annual meeting of the Association for Educational Communications and Technology, Houston, Texas, 10 February 1999.

Spector, J. M. (1999, April). *Transparency and interaction in system dynamics-based learning environments*. Presentation at the American Educational Research Association Annual Meeting, 22 April, 1999, Montréal, Canada.

Spector, J. M. (1999, April). *Understanding and automating teaching and learning systems.* Panel moderator and discussant for the Structural Learning and Intelligent Systems SIG at the American Educational Research Association Annual Meeting, 23 April, 1999, Montréal, Canada.

Spector, J. M., Wasson, B., Davidsen, P. I., & Milrad, M. (1999, June). *Designing collaborative distance learning environments for complex domains.* Paper presented at the World Conference on Educational Multimedia and Hypermedia, ED-Media '99, Seattle, Washington, 21 June 1999.

Makochieng, O., & Spector, J. M. (1999, August). Design, implementation and evaluation of a web-enabled instructional database: A case study of the OrthoDL system. Paper presented at the 8th European Conference for Research on Learning and Instruction, Göteborg, Sweden, 25 August 1999.

Spector, J. M., Guribye, F., Wasson, B.,& Lindström, B. (1999, August). *Theoretical foundations for the design of collaborative distance learning.* Paper presented at the 8th European Conference for Research on Learning and Instruction, Göteborg, Sweden, 26 August 1999.

Spector, J. M. (1999, August). Courseware engineering for learning communities. Moderator and presenter at a special interactive technology symposium at the 8th European Conference for Research on Learning and Instruction, Göteborg, Sweden, 25August 1999.

Spector, J. M., Davidsen, P. I., & Bahaa, M. (1999, August). Training support for decision making and policy formulation in complex domains. Symposium presentation at the 8th European Conference for Research on Learning and Instruction, Göteborg, Sweden, 26 August 1999.

Spector, J. M., Davidsen, P. I., & Bahaa, M. (1999, August). Transparency and interaction in system dynamics based learning. Symposium presentation at the 8th European Conference for Research on Learning and Instruction, Göteborg, Sweden, 27 August 1999.

Milrad, M., Spector, J. M., & Davidsen, P. I. (2000, February). *Building and using simulation based environments for learning about complex domains.* Paper presentation at Mathematics/Science Education & Technology 2000, San Diego, CA, 7 February, 2000.

Spector, J. M. (2000, April). *Philosophy of instructional design for the 21st century.* Invited paper presentation at the American Educational Research Association Annual Meeting, 27 April 2000, New Orleans, Louisiana.

Spector, J. M. (2000, May). Invited discussant at the 19th EUCEN Conference 4-6 May 2000, University of Bergen, Bergen, Norway.

Spector, J. M. (2000, June). *Using a system dynamics based approach for crisis management.* Workshop presentation at ITS 2000, Montreal, Canada, 20 June 2000.

Spector, J. M., Christensen, D. L. & McCormack, D. (2000, June). *Evaluating the impact of system dynamics based learning environments.* Paper presentation at the World Conference on Educational Multimedia, Hypermedia and Telecommunications, ED-Media 2000, Montreal, Canada, 28 June 2000.

Spector, J. M. (2000, July). *Instructional design for collaborative learning environment in Training.* Invited paper and presentation at the Instructional Design Special Interest Group of the European Association for Research on Learning and Instruction, Barcelona, Spain, 5 July 2000.

Christensen, D. L., Spector, J. M., Sioutine, A., & McCormack, D. (2000, August). *Evaluating the impact of system dynamics based learning environments: Preliminary study.* Paper presentation at the 18th International Conference of the System Dynamics Society, Bergen, Norway, 8 August, 2000.

Spector, J. M., & Eseryel, D. (2000, October)*. Assessing adaptive instructional design Tools and methods in Adapt[IT].* Paper presentation at the Association for Educational and Communications Technology Conference, Denver, Colorado, October, 2000.

Spector, J. M., & Ganesan, R. (2000, October). *Causal influence diagrams as pedagogical and assessment tools.* Presentation at CILT 2000, Tyson's Corner, VA, 28 October 2000.

Spector, J. M., & Goodyear, P. (2000, November). *Competencies for Online Design, Development and Delivery of Instructional Materials.* Paper presentation at the WebNET 2000 Conference, San Antonio, Texas, November, 2000.

Spector, J. M., Ganesan, R., & Edmonds, G. S. (2001, April). *Modeling and discourse in learning: The changing nature of instructional design for networked learning.* Invited presentation at the annual meeting of the American Educational Research Association, Seattle, WA, 10 April 2001.

Spector, J. M. (2001, April). *Introduction to the principles of instructional design.* Seminars for Estacio de Sa in Rio de Janerio and Sao Paulo, Brazil, 23-27 April, 2001.

Spector, J. M. (2001, May). *Intelligent performance support for instructional design - maybe.* Invited presentation at the International Conference on Instructional Design: Addressing the Challenges of Learning through Curriculum and Technology, Freiburg, Germany, 3 May 2001.

Spector, J. M., Eseryel, D., & Schuver-van Blanken, M. J. (2001, June). Current practice in designing training for complex skills: Implications for design and evaluation of Adapt[IT]. Paper presentation at ED-Media 2001, Tampere, Finland, June 2001.

Spector, J. M. (2001, August). *Holistic perspectives on integrating technology, learning & instruction.* Invited presentation at the 13th Annual Utah State University Instructional Technology Institute, Logan, UT, 29 August 2001.

Spector, J. M. (2001, August). *Integrating causal influence diagrams and system dynamics into learning for complex domains.* Invited presentation at the 13th Annual Utah State University Instructional Technology Institute, Logan, UT, 31 August 2001.

Spector, J. M., Gray, P. J., Doughty, P. L., Robinson, D. J., Arnold, P. P., Colley, R. C., & Eseryel, D. (2001, October). *The Mellon project: Cost and learning effects of alternative e-collaboration methods in online settings.* Panel presentation at Teaching Tools 2001, Syracuse University, Syracuse, NY, 11 October 2001.

Richey, R. C., Spector, J. M., & Klein, J. D. (2001, November). *The ibstpi competencies: Standards, definitions, and use.* Presentation at AECT 2001, Atlanta, Georgia, 8 November 2001.

Spector, J. M., & Ganesan, R. (2001, November). *Competencies for online teaching.* Presentation at AECT 2001, Atlanta, Georgia, 8 November 2001.

Spector, J. M. (2001, November). *Competencies, methods and tools for tele-designers and tele-trainers in the workplace.* Invited panel presentation at Telelearning 2001, Vancouver, Canada, 11 November 2001.

Spector, J. M. (2001, November). *Pedagogical Issues - Simulations in training: System dynamics based learning environments.* Invited presentation at the Saab Training Systems Science Council, University of Twente, Enschede, The Netherlands, 13 November 2001.

Spector, J. M. (2002, May). *Meet the Editors*, *Tribute to Gagné,* and, *Modeling and Conceptual Change.* Sessions led at the annual meeting of Professors of Instructional Design and Technology, Smith Mountain, Virginia, 17-20 May 2002.

Davidson, B. D., Dusek, J. B., Koszalka, T. A., & Spector, J. M. (2002, September/October). Technology in the classroom: Payoffs and pitfalls. Panel presentation sponsored by Faculty Computing & Media Services, Syracuse University, Syracuse, NY, 30 September and 29 October 2002.

Spector, J. M., Robinson, D. J., Arnold, P. P., Doughty, P. L., & Leavitt, M. C. (2002, October). *Understanding the use of alternative communications and collaboration strategies in online settings*. Panel presentation at Teaching Tools 2002, Syracuse University, Syracuse, NY, 24 October 2002.

Wang, X., & Spector, J. M. (2002, October). Virtual projects in distributed learning environments. Paper presentation at E-Learn 2002, Montreal, Canada, October, 2002.

Leavitt, M., Spector, J. M., Gray, P., Reduan, N., & Ganesan, R. (2002, October). *Alternative communication methods in online settings: A study of demands and effects.* Panel presentation at E-Learn 2002, Montreal, Canada.

Driscoll, M., & Spector, J. M. (2002, November). A tribute to Robert M. Gagné. Presidential session at the annual meeting of the Association for Educational Communications and Technology, Dallas, TX.

Spector, J. M., Klein, J. D., Fields, D., de la Teja, I., Grabowski, B., Sims, R. C., & Visser, J. (2002, November). *Developing and validating competencies for classroom and online teachers*. Full paper presentation at the annual meeting of the Association for Educational Communications and Technology, Dallas, TX.

Spector, J. M. (2002, December). *Competencies for online teaching*. Invited keynote presentation at Vidyakash 2002: International Conference on Online Learning, Ministry of Communications and Information Technology, Mumbai, India.

Koszalka, T. A., Spector, J. M., & Epling, J. (2003, February). *Making medical education more effective*. Invited presentation for Upstate Medical University, Syracuse, NY, February 6, 2003.

Spector, J. M. (2003, March). *Educational modeling and simulations*. Invited seminar for graduate students and faculty, Florida State University, Tallahassee, FL, March 31, 2003.

Spector, J. M. (2003, October). *Questioning Merrill:Constructing the future of instructional science and technology*. Panel organizer and presenter at the annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 23, 2003.

Spector, J. M. (2003, October). *The Future of ERIC - Educational Resources Information Center*. Panel organizer and presenter at the annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 23, 2003.

Klein, J. D., Spector, J. M., Grabowski, B., de la Teja, I., Visser, J., Ganesan, R., & Song, H. D. (2003, October). *Research on instructor competencies*. Presentation at the annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 25, 2003.

Spector, J. M. (2003, October). *Building a course: Pedagogy and BlackBoard*. Presentation at Teaching Tools, Syracuse, New York, October 16, 2003.

Spector, J. M. (2003, November). *Modeling and Simulation in Learning and Instruction*. Seminar presented at the University of Freiburg, Germany, November, 2003.

Spector, J. M. (2004, February). Participation in a panel presentation by the Instructional Design and Technology Futures Group at Pennsylvania State University, State College, PA, February, 2004.

Spector, J. M. (2004, May). *Current issues in new learning*. Invited keynote address at New Learning 2004, Skiathos, Greece, 10-12 May 2004.

Ganesan, R., & Spector, J. M. (2004, October). *Teaching philosophies and practices of highly experienced online educators*. Presentation at the Association for Educational Communications and Technology, Chicago, IL, October 21, 2004.

Spector, J. M., & Koszalka, T. A. (2004, October). *Assessing learning in complex domains*. Presentation at the annual meeting of the Association for Educational Communications and Technology, Chicago, IL, October 22, 2004.

Spector, J. M. (2004, October). *Where are we going and how will we get there?* Panel presentation at the Association for Educational Communications and Technology, Chicago, IL, October 22, 2004.

Spector, J. M., & Grabowski, B. (2004, October). *Past, present and future of training support and instructional technologies*. Presidential panel at the Association for Educational Communications and Technology, Chicago, IL, October 23, 2004.

Spector, J. M. (2004, December). *Advances in cognition, learning and performance in the digital age*. Invited keynote address at Cognition and Exploratory Learning in the Digital Age (CELDA 2004), Lisbon, Portugal, 15-17 December, 2004.

Spector, J. M., Dennen, V. P., & Koszalka, T. A. (2005, March). Individual and collaborative construction of causal concept maps: An online technique for learning and assessment. *Proceedings of the International Conference for Methods and Technologies for Learning*. Palermo: Institute for Educational Technology, Italian Research Council.

Spector, J. M., Dennen, V. P., & Koszalka, T. A. (2005, April). *Causal maps, mental models and assessing acquisition of expertise*. Presentation for the Technology, Instruction, Cognition and Learning Special Interest Group at the Annual Meeting of the American Educational Research Association, Montreal, Canada, April, 2005.

Spector, J. M., & Koszalka, T. A. (2005, October). *Annotated causal concept maps: An online technique for learning and assessment*. Presentation at the annual meeting of the Association for Educational Communications and Technology, Orlando, FL, October, 2005.

Strobel, J., Spector, J. M., Jonassen, D. H., Seel, N. M., & Hung, W. (2005, October). *Learning by modeling*. Panel presentation at the annual meeting of the Association for Educational Communications and Technology, Orlando, FL, October, 2005.

Visser, J., Spector, J. M., Stirling, D., Rogoza, C., Bransford, J., Beaudoin, M., van Merriënboer, J. J. G., & La Point, D. (2005, October). *Learners in a changing learning landscape: New roles and expectations*. Presidential panel presentation at the annual meeting of the Association for Educational Communications and Technology, Orlando, FL, October, 2005.

Gibbons, A. S., Spector, J. M., Wager, W., Boling, E., Schwier, R. (2005, October). *Building the culture of instructional design: Reflection on IDT futures*. Panel presentation at the annual meeting of the Association for Educational Communications and Technology, Orlando, FL, October, 2005.

Spector, J. M., & Dennen, V. P. (2005, December). *Bridging the gap between learning and technology*. Invited CELDA 2005 Tutorial Session, Porto, Portugal, 14 December 2005.

Spector, J. M. (2006, April). *Using technology to assess technology-facilitated learning in complex domains*. Paper presentation at the annual meeting of the American Educational Research Association, San Francisco, California, April, 2006.

Spector, J. M. (2006, June). *From learning to instruction: Adventures and advances in instructional design*. Invited keynote address at the biennial meeting of the European Association for Research on Learning and Instruction, Special Interest Groups on Instructional Design and Computer-based Learning and Instruction, Leuven, Belgium, June, 2006.

Spector, J. M., Seel, N. M., & Visser, J. (2006, June). *Central research problems in learning and instruction*. Presented via Web-conferencing to the first annual AECT summer research symposium, Bloomington, IN, June 23, 2006.

Johnson, T. E., O'connor, D. L., Pirnay-Dummer, P. N., Ifenthaler, D., Spector, J. M., & Seel, N. M. (2006, September). *Comparative study of mental model research methods: Relationships among ACSMM, SMD, MITOCAR and DEEP Methodologies*. Second International Conference on Concept Mapping, San José, Costa Rica, September, 2006).

Burton, J., Jonassen, D. H., Reigeluth, C. M., & Spector, J. M. (2006, October). *Building the research bridge: How do we connect theory to research*? Panel presentation at the Annual Meeting of the Association of Educational Communications and Technology, Dallas, TX, October 13, 2006.

Spector, J. M., Merrill, M. D., Gibbons, A., Molenda, M., & Lockee, B. (2006, October). *The third edition of the Handbook of Research on Educational Communications and Technology*. Presidential session at the Annual Meeting of the Association of Educational Communications and Technology, Dallas, TX, October 13, 2006.

Spector, J. M. (2006, November). *Generating and assessing stories in support of learning and instruction*. Invited presentation at the Air Force Research Laboratory workshop "Storytelling as an Instructional Method: In Search of Theoretical and Empirical Foundations," Mesa, AZ, November 7-8, 2006.

Spector, J. M. (2006, December). *Assessing who is learning and how*. Invited keynote presentation at the annual meeting of the Australian Society for Computers in Learning in Tertiary Education (ASCILITE 2006) in Sydney, Australia, December 4, 2006.

Spector, J. M., & Dennen, V. P. (2006, December). *Supporting and assessing learning in complex problem domains: Perspectives from cognitive science and educational technology*. Invited tutorial presentation at Cognition and Exploratory Learning in the Digital Age (CELDA 2006) Conference in Barcelona, Spain, December 8, 2006.

Spector, J. M. (2007, January). *Trends and issues in e-learning research and development*. Invited presentation for the National Science and Technology Program for e-Learning, Taipei, Taiwan, January 24, 2007.

Spector, J. M. (2007, January). *Making educational research count*. Invited presentation for the National Science and Technology Program for e-Learning, Taipei, Taiwan, January 24, 2007.

Spector, J. M., & Ross, S. M. (2007, April). Journal talks: *Educational Technology Research and Development*. Annual meeting of the American Educational Research Association, Chicago, IL, April 11, 2007.

Spector, J. M. (2007, July). *Instructional modeling and simulation*. Seminar presented at the University of Freiburg, Germany, July, 2007.

Spector, J. M., & Luschei, T. (2007, September). Invited faculty workshops on transforming training packets into certified learning packets, curriculum development and evaluation, computer-based learning and instructional materials, action research, technology in strategic planning, and web-based collaboration at Universitas Terbuka, Jakarta, Indonesia, September, 2007.

Spector, J. M. (2007, October). *Training and performance improvement in the workplace*. Invited panel presentation at the 51st annual meeting of the Human Factors and Ergonomics Society, Baltimore, Maryland, October, 2007.

Spector, J. M. (2007, October). *Update on the third edition of the Handbook of Research on Educational Communications and Technology*. Presented at a presidential session at the Annual Meeting of the Association of Educational Communications and Technology, Anaheim, CA, October 25, 2007.

Huang, W. D., Johnson, T. E., & Spector, J. M. (2007, October). *Feasibility of using game strategies for training various outcomes.* Paper presentation at the Annual Meeting of the Association of Educational Communications and Technology, Anaheim, CA, October 26, 2007.

Gibbons, A., Boling, E., Parrish, P. E., Schwier, R., Spector, J. M., & Wilson, B. (2007, October). *Different takes on a common design experience: A kaleidoscope of design perspectives.* Panel presentation at the Annual Meeting of the Association of Educational Communications and Technology, Anaheim, CA, October 26, 2007.

Nielsen, M. C., Strand, E., Spector, J. M., & Savenye, W. (2007, October). *Developing faculty expertise in integrating technology into teaching and learning across campus.* Paper presentation at the annual meeting of the Association of Educational Communications and Technology, Anaheim, CA, October 26, 2007.

Spector, J. M., & Ross, S. M. (2008, March). Journal talks: *Educational Technology Research and Development*. Roundtable Presentation at the annual meeting of the American Educational Research Association, New York, NY, March 25, 2008.

Spector, J. M., & Johnson, T. E. (2008, March). Knowledge representations, associated theories and implications for instructional systems: Dialogue on deep structures. Panel discussant at the annual meeting of the American Educational Research Association, New York, NY, March 25, 2008.

Spector, J. M., & Johnson, T. E. (2008, March). Design considerations for integrating concept maps into learning and assessment. Paper presentation at the annual meeting of the American Educational Research Association, New York, NY, March 26, 2008.

Pirnay-Dummer, P., & Spector, J. M. (2008, March). Modeling complex systems: Language, association and re-representation. Paper presentation at the annual meeting of the American Educational Research Association, New York, NY, March 26, 2008.

Spector, J. M. (2008, April). Assessing learning in complex task domains. Presentation at Hanyang Univrsity, Seoul, South Korea, April 2008.

Spector, J. M. (2008, April). Publishing educational technology research in refereed journals. Workshop conducted at the Korean Society for Educational Technology, Seoul, South Korea, April, 2008.

Spector, J. M. (2008, April). Educational technology research trends: Technology enhanced assessments. Invited keynote address at the Korean Society for Educational Technology, Seoul, South Korea, April, 2008.

Spector, J. M. (2008, May-June). Invited faculty workshops on developing a tutorial for instructional design, conducting institutional research, developing training for online tutors, and developing an online tutorial for classroom action research. Universitas Terbuka, Jakarta, Indonesia, May-June, 2008.

Spector, J. M. (2008, June). Assessing learning in complex domains: A look at representations of mental models. Invited presentation at the Association for Educational and Communications Technology Summer Research Symposium, Bloomington, Indiana, June 21, 2008.

Spector, J. M. (2008, July). Grand research challenges in technology-enhanced learning. Invited panelist at the 8th IEEE International Conference on Advanced Learning Technologies, Santander, Spain, July 4, 2008.

Spector, J. M. (2009, February). R

Spector, J. M. (2009, May). The Association for Educational Communications and Technology. Invited talk at the annual meeting of the Korean Society for Educational Technology. Seoul, South Korea, May, 2009.

Spector, J. M. (2009, May). Curricula models for advanced learning technology. Presentation at the annual meeting of the Korean Society for Educational Technology, Seoul, South Korea, 15 May 2009.

Spector, J. M. (2009, October). Educational technology trends, directions and research issues. Invited seminar at the International Seminar on Research in Higher Education, Graduate School and the Learning Resource Centre, State University of Jakarta, October 10, 2009.

Nielsen, M. C., Savenye, W., & Spector, J. M. (2009, October). Developing technology savvy faculty across a campus. Presidential panel session at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 29, 2009.

Spector, J. M., Merrill, M. D., & Bishop, M. J. (2009, October). Planning the fourth edition of the *Handbook of Research on Educational Communications and Technology*. Presidential panel session at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 29, 2009.

Bull, G., Herring, M., & Spector, J. M. (2009, October). The National Technology Leadership Coalition and AECT's involvement. Presidential panel session at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 29, 2009.

Myers, J., Mendenhall, A., Johnson, T. E., & Spector, J. M. (2009, October). Designing an online disaster awareness and preparedness course: Trials and tribulations. Presidential panel session at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 30, 2009.

Bu, L., & Spector, J. M. (2009, October). Toward a model-based instructional design framework for teaching dynamic mathematics using interactive technologies. Paper presentation at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 30, 2009.

Spector, J. M., & Hannafin, M. J. (2009, October). The ETR&D editors. Presentation for the Graduate Student Association at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 30, 2009.

Mendenhall, A., Myers, J., Johnson, T. E., & Spector, J. M. (2009, October). Overcoming learning challenges through student collaboration using Web 2.o in an online disaster preparedness course. Presentation at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 30, 2009.

Visser, J., Hannafin, M. J., Spector, J. M., Bull, G., Wilson, B., & Reigeluth, C. M. (2009, October). Building the scientific mind. Presidential panel session at the annual meeting of the Association of Educational Communications and Technology, Louisville, KY, October 30, 2009.

Isaías, P., Kinshuk, Spector, J. M., & Ifenthaler, D. (2009, November). Opening session for the cognition and exploratory learning in the digital age annual conference. Rome, Italy, November 20, 2009.

Bull, G., Spector, J. M., Schrum, L., Thompson, A., Smaldino, S., McAnear, A., Sprague, D., Schmidt, D. (2010, January). Publishing your work in educational technology journals: Meet the editors. Panel presentation at the 8th annual Hawaii International Conference on Education, Honolulu, Hawaii, January 9, 2010.

Spector, J. M. (2010, February). Editors panel. Presentation at the Seventh Annual National Science Foundation ITEST Summit, Washington, DC, February 25, 2010.

Bu, L., & Spector, J. M. (2010, February). The impact of model-centered instruction on preservice mathematics teachers' lesson planning. Paper presented at the Annual Meeting of the Association of Teacher Educators, Chicago, IL, February 14-17, 2010.

Kim. C., Kim, M., Lee, C., Spector, J. M., & the CSR Group at LSI (2010, March). Teachers' beliefs, philosophical foundations for pedagogy, and technology integration. Paper presented at the 2010 Society for Information Technology & Teacher Education (SITE) Conference, San Diego, CA, March, 2010.

Spector, J. M. (2010, April). Technology integration in poorly performing rural schools K-8 schools in the Southeast: Possibilities and Pitfalls. Invited presentation at the Annual Meeting of the Arkansas Association of Instructional Media, Hot Springs, AR, April 19, 2010.

Bu, L., & Spector, J. M. (2010, April). Learning to teach mathematics using next-generation technology: The complex dynamics of decision making. Paper presentation at the Annual Meeting of the American Educational Research Association, Denver, CO, April 30, 2010.

Kim, C., Kim, M., Spector, J. M., DeMeester, K., McKeown, J., Capps, J., Litchfield, B. C., & Howard, S. K. (2010, April). Teachers' epistemological beliefs, teaching philosophy, and technology integration. Paper presentation at the Annual Meeting of the American Educational Research Association, Denver, CO, April 30, 2010.

Spector, J. M. (2010, May). Integrating a systems-thinking perspective into learning and instruction for complex and challenging tasks. Paper presentation at the Annual Meeting of the American Educational Research Association, Denver, CO, May 3, 2010.

Spector, J. M. (2010, May). Invited panelist for the closing seminar session at KSET 2010, Seoul, South Korea, May 8, 2010.

Spector, J. M. (2010, May). Examining the horizons of educational technology integration. Invited seminar at Ewha Womans University, Seoul, South Korea, May 10, 2010.

Spector, J. M. (2010, May). Core issues in educational technology research: Assessment of learning in complex domains. Invited seminar at Keimyung University, Daegu, South Korea, May 11, 2010.

Spector, J. M. (2010, May). Educational technology leadership in the 21st century. Invited keynote address at the International Seminar on Integrating Technology into Education, Jakarta, Indonesia, May 17, 2010.

Spector, J. M. (2010, May). Educational technology education and training. Invited seminar at the State University of Jakarta, Jakarta, Indonesia, May 21, 2010.

Spector, J. M. (2010, July). Examining the horizons of technology integration in education: Assessing learning in complex domains. Invited inaugural keynote address at the Second Annual Technology for Education, Mumbai, July 1, 2010 [delivered via Web-conferencing].

Spector, J. M. (2010, July). *The future of distance learning technology: It's not about the technology and it's not about the distance.* Paper presented at the Association for Educational Communications and Technology Biannual Research Symposium, Bloomington, IN, July 21, 2010.

Spector, J. M. (2010, October). Assessing progress of learning in complex domains. Invited paper presentation at the 11th International Conference on Education Research, Seoul, South Korea, October 1, 2010.

Spector, J. M. (2010, October). The outlook for educational technology professionals. Invited talk at the 12th Annual meeting of the Georgia Council of Media Organizations (COMO), Athens, GA, October 14, 2010.

Spector, J. M., Merrill, M. D., Elen, J., & Bishop, M. J. (2010, October). The handbook of research on educational communications and technology (4th ed.): Progress review. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 27, 2010.

Spector, J. M. (2010, October). Competence models for advanced learning technology. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 27, 2010.

Spector, J. M., Ifenthaler, D., & Elen, J. (2010, October). The encyclopedia of the sciences of learning: Progress review. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 28, 2010.

Spector, J. M. (2010, October). What do we make of design? Design as a concept in educational technology. Panel presenter and discussant at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 28, 2010.

Johnson, T. E., & Spector, J. M. (2010, October). The international center for learning, education and performance systems. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 28, 2010.

Suparman, A., Luschei, T., Padmo, D., & Spector, J. M. (2010, October). Distributed basic education & the Open University of Indonesia. Presidential panel presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 28, 2010.

Hollandsworth, R., Spector, J. M., Blatt, L., Jordan, M. B., & Brown, C. A. (2010, October). The exchange between researchers and practitioners: A 360 degree panel discussion on the transfer of knowledge. Presidential panel presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 28, 2010.

Nielsen, M.C., Spector, J. M., & Martindale, T. (2010, October). The New Media Consortium and AECT. Presidential panel presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 29, 2010.

Kim, H. S., & Spector, J. M. (2010, October). Designing collaboration scripts for computer-mediated argumentation. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 29, 2010.

Hannafin, M. J., Spector, J. M., Boling, E., Watson, G., & Brown, A. (2010, October). Meet the editors. Panel presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 29, 2010.

Spector, J. M., & Brown, A. (2010, October). The National Technology Leadership Coalition and AECT's involvement. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 30, 2010.

Mendenhall, A., Park, S. W., Luschei, T., & Spector, J. M. (2010, October). The evaluation of an online Bahasa Indonesia language course for beginners. Presentation at the Annual meeting of the Association for Educational Communications and Technology, Anaheim, CA, October 20, 2010.

Lockee, B. B., Brown, A., Spector, J. M., Herring, M., Smaldino, S., & Bull, G. (2010, October). The National Technology Leadership Coalition and AECT's involvement. Panel presentation at the annual meeting of the Association of Educational Communications and Technology, Anaheim, CA, October 30, 2010.

Spector, J. M. (2011, March). Meet the editors. Panel presentation at the Annual Meeting of the Society for Information Technology and Teacher Education, Nashville, TN, March 8, 2011.

Spector, J. M. (2011, March). Performance Assessment of 21st Century Teaching and Learning. Panel presentation at the Annual Meeting of the Society for Information Technology and Teacher Education, Nashville, TN, March 9, 2011.

Spector, J. M. (2011, April). Assessing complex problem solving: Theories, methods and tools. Session discussant at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 8, 2011.

Spector, J. M. (2011, April). Creative conversations and potential collaborations between educational technology labs and institutes. Panel Session at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 8, 2011.

Spector, J. M. (2011, April). Knowledge maps for representation of higher-order cognitions: Potentials and limitations from an international perspective. Session discussant at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 10, 2011.

Kim, C., DeMeester, K., Spector, J. M., Kim, M. K., & Lee, C-J. (2011, April). Teacher pedagogical beliefs, technology integration, and student learning. Paper presentation at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 11, 2011.

Kim, A., Spector, J. M., & Shute, V. (2011, April). Effects of initial mental model construction on mental model development, performance, intrinsic motivation, and metacognition in a task-centered learning environment. Paper presentation at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 12, 2011.

Spector, J. M. (2011, May). Developing and assessing knowledge and skills in complex domains. Knowledge Media and e-Learning Workshop. Hong Kong: Hong Kong University, May 18, 2011.

Spector, J. M. (2011, May). Emerging educational technologies and research directions. Faculty seminar. Hong Kong University, May 19, 2011.

Spector, J. M. (2011, May). Academic publishing: Inside ETR&D and other peer-reviewed journals. Faculty seminar, Hong Kong University, 24 May, 2011.

Spector, J. M. (2011, September). Emerging educational technologies and research directions. Invited panel presentation at the 6th International Conference on E-Learning and Games, Edutainment 2011, Taipei, Taiwan, Sep 2011.

Spector, J. M. (2011, September). Academic publishing: Inside ETR&D and other peer-reviewed journals. Invited panel presentation at the 6th International Conference on E-Learning and Games, Edutainment 2011, Taipei, Taiwan, Sep 2011.

Spector, J. M. (2011, September). Instructional technology: Where I have been and where the field is headed. Invited seminar at National Cheng Kung University, Tainan, Taiwan, 13 Sep 2011.

Spector, J. M, (2011, October). Dynamic formative assessment in online learning environments. Paper presentation at the 24th ICDE World Conference on Open & Distance Learning, Bali, Indonesia, 4 Oct 2011.

Spector, J. M. (2011, November). Development of multi-cultural basic education using ICT in Indonesia. Paper presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 9 Nov 2011.

Spector, J. M. (2011, November). Current and future trends in the field of instructional design and technology. Panel presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 9 Nov 2011.

Spector, J. M. (2011, November). A scenario based learning approach: A competency based learning approach for multicultural classrooms. Paper presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 10 Nov 2011.

Spector, J. M. (2011). Performance assessment of 21st century teaching and learning: Insights into the future. Panel presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 11 Nov 2011.

Spector, J. M. (2011). Instructional design pathways and byways. Panel presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 11 Nov 2011.

Spector, J. M. (2011). Theoretical suggestions for adaptive instruction. Paper presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 11 Nov 2011.

Spector, J. M. (2012, February). Program evaluation. Invited presentation at Sabancı Univeristy, Istanbul, Turkey, 16 Feb 2012.

Spector, J. M. (2012, February). Developing and assessing knowledge and skills in complex domains. Invited presentation at Sabancı Univeristy, Istanbul, Turkey, 17 Feb 2012.

Spector, J. M. (2012, February). Formative assessment to promote learning and improve instruction. Invited presentation at Sabancı Univeristy, Istanbul, Turkey, 21 Feb 2012.

Spector, J. M. (2012, February). New trends in educational technology and related research issues. Invited presentation at Saryaka University, Sakaryaka, Turkey, 23 Feb 2012.

Kim, M. K., & Spector, J. M. (2012, April). Development of an assessment technology for measuring knowledge structures based on the use of natural language responses to a complex problem. Paper presentation at the Annual Meeting of the American Educational Research Association, Vancouver, Canada, 14 Apr 2012.

Spector, J. M. (2012, April). Instructional design research: Current and emerging trends. Discussant at the Annual Meeting of the American Educational Research Association, Vancouver, Canada, 16 Apr 2012.

Spector, J. M. (2012, May). Formative evaluation as a core aspect of program evaluation. Invited presentation at the International Design-based Research Conference, University of Twente, Enschede, The Netherlands, 23 May 2012.

Spector, J. M. (2013, April). Developing the next generation of instructional design and instructional design professionals. Discussant at the Annual Meeting of the American Educational Research Association, San Francisco, 28 Apr 2013.

Spector, J. M. (2013, April). Editors forum. Presentation at the Computer and Internet Applications in Education SIG, Annual Meeting of the American Educational Research Association, San Francisco, 30 Apr 2013.

Spector, J. M. (2013, May). Tensions and synergy in emerging technologies and the sciences of learning. Invited presentation at the Symposium on Emerging Technology and STEM Education, Oklahoma University, Normal, Oklahoma, 6 May, 2013.

Spector, J. M. (2013, May). Educational technology trends and research issues. Invited keynote presentation at the International Educational Technology Conference, Kuala Lumpur, Malaysia, 13 May 2013.

Spector, J. M. (2013, June). Games, learning, instruction and research. Invited keynote address at AECT-ICFER, Taichung City, Taiwan, 19 June 2013.

Spector, J. M. (2013, July). Tensions and synergy in emerging technologies and the sciences of learning. Invited Lecture for the Daxia Forum, East China Normal University, Shanghai, China, 9 July 2013.

Spector, J. M. (2013, July). Games, learning, instruction and research. Invited session at the Peking University Education Summer School, Beijing, China, 19 July 2013.

Spector, J. M. (2013, September). Invited presentation at Embry-Riddle Aeronautical University, Daytona Beach, FL, September 2013.

Spector, J. M. (2013, October). Invited keynote presentation at the International Conference on Educational Research, Seoul, South Korea, October 2013.

Spector, J. M. (2014, March). Educational technology: Research progress and some promising technologies. Invited presentation at Georgia Southern University, Statesboro, GA, March 2014.

Spector, J. M. (2014, March). Program evaluation: A framework for improving learning and instruction. Invited workshop at the University of Malaya, Kuala Lumpur, Malaysia, March 2014.

Spector, J. M. (2014, March). Ongoing discussions in educational technology: What researchers are investigating and debating. Invited seminar at the University of Malaya, Kuala Lumpur, Malaysia, March 2014.

Spector, J. M. (2014, April). Editor's panel presentation for the Instructional Technology SIG at the Annual Meeting of the American Educational Research Association, Philadelphia, PA, April 2014.

Spector, J. M. (2014, May). Program evaluation and educational technology research. Invited seminar at Hong Kong University, Hong Kong, May 2014.

Spector, J. M. (2014, May). Academic writing and publishing educational research. Invited seminar at Hong Kong University, Hong Kong, May 2014.

Spector, J. M. (2014, June). Emerging educational technologies. Invited presentation at the 6th Knowledge Management & E-Learning Conference, Hong Kong, June 2014.

Spector, J. M. (2014, June). A critical examination of MOOCs with remarks about Mini-MOOCs. Invited keynote address at the CITE (Centre for Information Technology in Education) 2014 Learning without Limits Research Symposium , Hong Kong University, Hong Kong, June 2014.

Spector, J. M. (2014, September). Balancing stable educational goals with changing educational technologies. Invited keynote presentation as the 2014 International Educational Technology Conference, Chicago, IL, September, 2014.

Spector, J. M. (2014, September). Educational technology inquiry, research and academic publishing. Invited presentation at East China Normal University, Shanghai, China, September, 2014.

Spector, J. M. (2015, March). Innovation versus replication in research findings: Has the novelty of new research findings worn off? Panel presentation at the SITE 2015 Conference in Las Vegas, Nevada, 3 March 2015.

Spector, J. M. (2015, March). Technology enhanced quality learning for all. Panel presentation at the SITE 2015 Conference in Las Vegas, Nevada, 4 March 2015.

Spector, J. M. (2015, March). National Technology Learning Summit Workshop for SITE SIG Leaders. Workshop participant and recorder at the SITE 2015 Conference in Las Vega, Nevada, 5 March 2015.

Spector, J. M. (2015, March). Deep learning assessment for near real-time, formative feedback during complex problem-solving activities. Presentation at the 2015 SIAM Conference on Computational Science and Engineering, Salt Lake City, Utah, 18 March 2015.

Spector, J. M. (2015, April). Future trends of designing learning in the global context. Invited presentation at the Learning Designs for Digital Natives conference, Beijing Normal University, Beijing, 8 April 2015.

Spector, J. M. (2015, May). Academic writing: Responding to reviewers. Invited workshop at the University of Hong Kong, Hong Kong, 11 May 2015.

Spector, J. M. (2015, May). Instructional design methods and practice: An evolving professional discipline. Invited presentation at the 7th annual Knowledge Management & E-Learning Conference, the University of Hong Kong, Hong Kong, 20 May 2015.

Spector, J. M. (2015, May). Designing, modeling and constructing: New learning paradigms. Keynote presentation at the International Mobile Learning Festival, the University of Hong Kong, Kong Kong, 22 May 2015.

Spector, J. M. (2015, May). Trends and concerns about designing in a global context. Keynote presentation at the International Educational Technology Conference, University of Istanbul, Turkey, 27 May 2015.

Spector, J. M. (2015, June). Advancing advanced learning technologies: Connecting theory, research, practice & policy. Invited seminar at the University of Hong Kong, Hong Kong, 5 June 2015.

Spector, J. M. (2015, June). The impact of instructional design: Questions of conscience. Invited presentation at the AECT-LKAOE Conference, East China Normal University, Shanghai, China, 17 June 2015.

Spector, J. M. (2015, June). Publishing strategies and opportunities for educational technology journals. Panel presentation, at the AECT-LKAOE Conference, East China Normal University, Shanghai, China, 18 June 2015.

Spector, J. M. (2015, July). Advancing advanced learning technologies: Connecting theory, research, practice and policy. Invited keynote presentation at the International Conference on Advanced Learning, Hualien, Taiwan, July 2015.

Spector, J. M. (2015, October). Research and evaluation of educational programs, projects, products, practices and policies. Invited presentation at Embry-Riddle Aeronautical University, Daytona Beach, FL, 6 October 2015.

Spector, J. M. (2015, October). Learning assistance in problem-based learning environments. Invited presentation at Embry-Riddle Aeronautical University, Daytona Beach, FL, 6 October 2015.

Spector, J. M. (2015, October). Smart learning technologies: Concepts and issues. Invited seminar at Beijing Normal University, Beijing, China, 14 October 2015.

Spector, J. M. (2015, November). Learning, design, and technology: An international compendium of theory, research, practice and policy. Presidential panel session at the annual conference of the Association for Educational Communications and Technology, Indianapolis, IN, 6 November 2015.

Spector J. M. (2015, November). Meet the editors of AECT journals. Panel session at the annual conference of the Association for Educational Communications and Technology, Indianapolis, IN, 5 November 2015.

Spector, J. M. (2016, January). Smart education and emerging technologies. Invited presentation at Tianjin University, Tianjin, China, 12 January 2016.

Spector, J. M. (2016, January). Smart learning environments: Concepts and issues. Keynote presentation at the Smart Education Conference, Beijing Normal University and the New Media Consortium, Beijing, China, 15 January 2016.

Spector, J. M. (2016, March). Smart learning environments: Concepts and issues. Invited presentation at the annual conference of the Society for Information Technology and Teacher Education (SITE), Savannah, Georgia, 23 March 2016.

Spector, J. M. (2016, March). Symposium on blended learning in teacher education. Panelist at the annual conference of the Society for Information Technology and Teacher Education (SITE), Savannah, Georgia, 22 March 2016.

Spector, J M. (2016, April). Symposium on designing to improve engagement and problem solving. Discussant at the annual conference of the American Educational Research Association (AERA), Washington, DC, 22 April 2016.

Spector, J. M. (2016, April). Using cyberlearning, coalitions, and model-based learning to provide specialized courses for small numbers of students: NSF-TUES project panel presentation. AACE symposium: Envisioning the future of undergraduate STEM education. Washington, DC, 28 April 2016.

Spector, J. M. (2016, April). Online learning panel session. AACE symposium: Envisioning the future of undergraduate STEM education. Washington, DC, 28 April 2016.

Natividad, G., Spector, J. M., & Evangelopoulos, N. (2016, July). An analysis of educational technology publications from 1995 to 2014. Paper presentation at the annual meeting of the International Conference on Advanced Learning Technologies, Austin, TX, 27 July 2016.

Spector, J. M. (2016, July). Educational technology research and practice. Keynote presentation at the Educational Technology World Conference, Bali, Indonesia, 31 July 2016.

Spector, J. M. (2016, August). Smart learning environments: Potential and pitfalls. Paper presentation at the Educational Technology World Conference, Bali, Indonesia, 2 August 2016.

Spector, J. M., Cronjé, J., & Childress, M. (2016, August). E-learning design, development, management and utilization. Seminar at the international research clinic and scientific publications of educational technology. State University of Surabaya, Indonesia, 6 August 2016.

Spector, J. M., Cronjé, J., & Childress, M. (2016, August). The nature of EMU (electronic, mobile and ubiquitous) learning. International postgraduate research seminar. State University of Jakarta, Indonesia, 7 August 2016.

Spector, J. M., Cronjé, J., & Childress, M. (2016, August). Designing and evaluating EMU (electronic, mobile and ubiquitous) learning. International postgraduate research seminar. State University of Jakarta, Indonesia, 8 August 2016.

Spector, J. M., Childress, M. C., & Lockee, B. B. (2016, October). Learning, design and technology: An international compendium of theory, research, practice and policy. Presentation at the annual AECT Conference, Las Vegas, 18 Oct 2016.

Spector, J. M. (2016, October). STEAM education and emerging technologies: Moving forward. Panel presentation Presentation at the annual AECT Conference, Las Vegas, 18 Oct 2016.

Spector, J. M. (2016, October). Designing for human learning in the Anthropocene. Presentation in the invited presidential session at the annual AECT Conference, Las Vegas, 19 Oct 2016.

Spector, J. M. (2016, October). Creativity in learning and instruction. Presentation in the invited presidential session at the annual AECT Conference, Las Vegas, 19 Oct 2016.

Spector, J. M. (2017, March). AI and the future of education. Invited presentation at the 2nd Annual Smart Education Conference, Beijing Normal University, Beijing, China, March 2017.

Spector, J. M. (2017, March). Research and evaluations of programs, projects, products, policies and practices: Big data and smart technologies. Invited talk at the International Symposium on Big Data and Smart Technologies for Research on Teaching and Learning. East China Normal University, Shanghai, China, March 2017.

Bhagat, K. K., & Spector, J. M. (2017, December). Authentic learning in a technology-rich classroom: Innovative education in the classroom. Presentation at the International Conference on Computers in Education, Christchurch, New Zealand, December 2017.

Spector, J. M. (2018, March). Technology and vocational education. Session chair. The third US-China smart education conference, Beijing, China, March 2018.

Spector, J. M. (2018, March). Smart computing and intelligence summit. Panel chair. Beijing, Smart Learning Institute, Beijing Normal University, March 2018.

Spector, J. M. (2018, March). A developmental approach to critical thinking: Preliminary framework. Webinar for the Smart Learning Institute, Beijing, March 2018.

Spector, J. M. (2018, March). Publishing educational research. Invited talk. Shanghai, East China Normal University, March, 2018.

Spector, J. M. (2018, March). Innovative and effective learning: Focusing on a developmental approach to critical thinking. Invited talk. Shanghai, East China Normal University, March 2018.

Spector, J. M. (2018, May). Co-organizer and presenter at the TCET-AECT symposium entitled "The Human-Technology Frontier: Understanding the Learning of Now to Prepare for the Work of the Future, Department of Learning Technologies, Denton, Texas, May 16-18, 2018.

Spector, J. M. (2018, May). Emerging technologies in China and the USA. Keynote presentation at the 22nd International Chinese Conference on Computing in Education., Guangzhou, China, South China Normal University, May 28, 2018.

Spector, J. M. (2018, May). Academic writing and publishing. Invited presentation at the 22nd International Chinese Conference on Computing in Education., Guangzhou, China, South China Normal University, May 28, 2018.

Spector, J. M. (2018, July). Thinking and learning in the Anthropocene: The new three Rs. Presented at the2018 International Big History Conference, Villanova University, Villanova, PA, 26-29 July 2019.

Ikle, M., Liu, H. P., Wolyniak, M. J., Isokpehi, R. D., & Spector, J. M. (2018). Institutional collaboration and hybrid learning for computational data-enabled science and engineering courses incorporating course-based undergraduate research experiences. Paper presentation at CUR 2018: Creating Collabhora5tive Connections in and through Undergraduate Research, Washington, D. C., July 1, 2018.

Bhagat, K. K., & Spector, J. M. (2018, July). A bibliometric analysis of six years of research on flipped classroom. Paper presentation at the International Conference on Advanced Learning Technologies [presented by Dr. Bhagat], Mumbai, India, July 2018.

Peng, H., Ma, S., & Spector, J. M. (2019, March). Personalized adaptive learning: An emerging pedagogical approach enabled by small learning environment. ICSLE, Denton, TX, March, 2919.

Tiruneh, D., Gu, X., & Spector, J. M. (2019, April). Teaching critical thinking in domain-specific courses: Does an explicit instructional approach promote transfer? The Comparative & International Education Society (CIES) Conference, San Francisco, CA, April, 2019.

Spector, J. M. (2019, July). Advanced learning technologies: Connecting theory, research, practice and policy. Invited seminar at the University of Science and Technology of China, Hefei, China, July 7, 2019.

Spector, J. M. (2022, August). Human and artificial intelligence in education. Invited keynote talk (virtual) at the Global Smart Education Conference held in Beijing, China, August 15, 2022.

Spector, J. M. (2022, September). What do digital technologies bring to learning and instruction? (virtual). Invited keynote at the International Conference on Distance Technologies in Technology, Hangzhou, China, September 17, 2022.

Spector, J. M. (2022, December). MOOCs and Spooks: When learning becomes apersonal. Invited talk at the MOOC and online education conference in Beijing, China, December 8, 2022).

OTHER PRESENTATIONS & WORKSHOPS (partial list)

Spector, J. M. (1987, October). *Artificial intelligence*. Presentation to the Kiwanis Club, Anniston, AL.

Spector, J. M. (1988, March). *Introduction to Ada*. Workshop presented at Enterprise Junior College, Dothan, AL.

Spector, J. M. (1988, April). *LOTUS 123, Advanced LOTUS 123, and Symphony*. Workshops for the Management Development Center, Jacksonville, AL.

Spector, J. M. (1988, May). *Computer resources at JSU*. Presentation for the Calhoun County Commissioners, Jacksonville, AL.

Spector, J. M. (1988, June). *Introducing LOTUS 123 & dBase III*. Workshop presented for the Data Processing Management Association, Jacksonville, AL.

Spector, J. M. (1988, October). *Expert systems in instructional design*. presentation to the Computer Science Club, Jacksonville State University, AL.

Spector, J. M. (1989, March). *Recursion in Pascal*. Presentation at Anniston high School, Anniston, AL.

Kyllonen, P. C., Spector, J. M., & Regian, J. W. (1991, December). *Advances in learning and instruction*. Presentation at the US Air Force Academy, CO.

Spector, J. M. (1992, July). *LOGO and instructional design*. Presented at the University of Barcelona, SPAIN.

Spector, J. M. (1995, March). *Intelligent performance for courseware development*. Presented at Stord College, Stord, NORWAY.

Spector, J. M. (1995, May). *Intelligent performance support for instructional design*. Presented at Télé-université, Montreal, CANADA.

Spector, J. M. (1996, March). *Design of learning environments for IT-users*. Presented at the external examination at dissertation defense of Lena Holmberg at Göteborg University, SWEDEN.

Spector, J. M., Davidsen, P. I., & Nielsen, M. (1997, June). *Instructional systems project management*. Seminar sponsored by the International Consortium for Courseware Engineering at the University of Bergen, 8-12 June, 1998.

Spector, J. M. (1998, July). *Exploring the Dimensions of Performance Improvement*. 20-21 July 1998, University of Bergen, Norway. Workshop organizer and moderator.

Spector, J. M. (1998, September). *Education for the 21st Century in Environmental Sciences: A Global Perspective*. 28 - 30 Sep 1998, University of Bergen, Norway. Workshop organizer and moderator.

Spector, J. M. (1999, January). *Technology-based learning and instruction*. Seminar for Kværner AS. Göteborg, Sweden, 7-8 January 1999.

Spector, J. M. (1999, February). *Designing learning environments: Historical perspective & foundations*. Invited presentations for graduate students in Pedagogical Information Science and System Dynamics at the University of Bergen, Bergen, Norway, February 1999.

Spector, J. M. (1999, February). *Intelligent performance support for instructional design: Where is the*

intelligence and is it artificial? Invited graduate seminar at the Department of Instructional Design, Development & Evaluation, Syracuse University, Syracuse, New York, 16 February 1999.

Spector, J. M. (1999, February). *Modeling the dynamics of large scale developments: What are the implications for instructional design?* Invited faculty seminar at the School of Education, Syracuse University, Syracuse, New York, 16 February 1999.

pector, J. M. (1999, March). *Philosophical implications for the design of instruction about complex systems.* Invited presentation at the conference on epistemology, psychology and instruction sponsored by the University of Twente and the EARLI Instructional Design Special Interest Group. Enschede, The Netherlands: University of Twente.

Spector, J. M. (1999, March). *Constructivist implications for instructional planning*. Invited seminar at the School of Pedagogy, Göteborg University, Göteborg, Sweden, 12 March, 1999.

Spector, J. M. (1999, March). *Technology based learning.* Invited presentation at the University of Bergen Kollegiet, Sølstrand, Norway, 24 March 1999.

Spector, J. M. (1999, October). *Integrated & Holistic Perspectives on Learning, Instruction & Technology. Conference organizer & moderator*. University of Bergen, Norway, 1-2 October 1999.

Spector, J. M. (1999, October). Technology and collaborative learning. Invited presentation at the 10th Network Conference on University and College Pedagogy, University of Bergen, Norway, 19-20 October 1999.

Spector, J. M. (1999, October). *Information & communications technologies for learning and instruction*. Invited presentation at the RABILDA Conference, Bergen, Norway, 23 October 1999.

Spector. J. M., Vold, V., Melingen, G. O., Guribye, F., Rysjedal, K., & Baggetun, R. (1999, November). *Technology in teaching and learning*. Invited presentation at the University of Bergen, Dugnad møte om IKT-basert undervisning, Bergen, Norway, 24 November 1999.

Spector, J. M. (2000, March). *Challenges of distance education: An international perspective*. Presentation for University College, Syracuse, NY, 9 March 2000.

Spector, J. M. (2000, April). Online interview for InTRO (Instructional Technology Online). Retrieved on December 20, 2004 from http://www.gsu.edu/~wwwitr/

Spector, J. M. (2000, November). *Integrated and holistic perspectives on learning, technology and instruction: The view from IDD&E*. Presentation for the Syracuse University Study Council, Syracuse, NY, 15 November 2000.

Spector, J. M. (2001, September). *A model to foster decision making and planning for technology integration.* Invited presentation for Catalyst PT3 Project Leadership hosted by the Office of Professional Development, Syracuse, NY, 13 September 2001.

Nielsen, M., Spector, J. M., Savenye, W., & Strand, L. (2002-2014). *Integrating technology in university teaching*. Faculty development workshop held in San Marcos, TX at Texas State University, two weeks every summer, 2002-2014.

Spector, J. M. (2002, September). *Introduction to knowledge management*. Workshop for the National Family Planning Coordinating Board of Indonesia (BKKBN), Syracuse, NY, 18 September 2002.

Spector, J. M. (2004). Conference organizer. Digital Empowerment Summer Institute: The Internet and Democracy. Syracuse, NY: Syracuse University Center for Digital Literacy.

Spector, J. M. (2004, September). *Assessing acquisition of expertise in complex domains*. Invited tutorial at the International Conference for Advanced Learning Technology (ICALT) Joensuu, Finland, 1 Sep 2004.

Sims, R., Grabowski, B., de la Teja, I., Spector, J. M., Russ-Eft, D. & Lee, M. (2005, June). Competencies for e-learning. Workshops based on *ibstpi* competencies in Melbourne, Brisbane and Sydney, Australia, June 2005.

Spector, J. M. (2005, June). Assessing learning in complex domains. Invited presentation for faculty and staff at the University of New South Wales, Sydney, Australia, 27 June 2005.

Spector, J. M. (2006, March). Mental models workshop. Member of the expert panel (with N. M. Seel & T. E. Johnson). Florida State University, Tallahassee, Florida, 27-28 March, 2006.

Spector, J. M. (2006, July). Cyber-security workshop (funded primarily by the Norwegian Research Council), Agder University College, Grimstad, Norway, July 19-22, 2006.

Spector, J. M. (2007, September). Editor's panel: How to get published in ETR&D and other educational technology journal. 1st Annual Research in Education Conference, Florida State University, Tallahassee, Florida, September 28, 2007.

Spector, J. M. (2010, February). Making connections, professional service, and getting published. Invited virtual presentation to the graduate seminar on Instructional Technology at Iowa State University, Ames, Iowa, February 3, 2010.

Spector, J. M. (2010, February). Assessing learning in complex domains. Invited presentation at Boise State University, Boise, Idaho, February 11, 2010.

Spector, J. M., & Kim, C. M. (2010, February). Designing online instruction: Lessons learned along the way. Invited presentation to the graduate seminar on Developing Online Instruction at the University of South Alabama, Mobile, AL, February 15, 2010.

Spector, J. M. (2010, April). Educational technology horizons: Possibilities and pitfalls. Invited Showcase presentation for Boise State University, Athens, GA, April 7, 2010.

Spector, J. M. (2010, October). Remarks on e³ learning: Implications for training and performance. Invited seminar at Chung-Ang University, Seoul, South Korea, October 2, 2010.

Spector, J. M. (2010, December). Lessons learned and perspectives on educational research. Invited presentation at Georgia Southern University, Statesboro, GA, December 6, 2010.

Spector, J. M. (2011, March). Using logic models in research and evaluation. Faculty development workshop, University of Georgia, March 31, 2011.

Spector, J. M. (2011, April). Meet the journal editors – ETR&D. Presentation at the Annual Meeting of the American Educational Research Association, New Orleans, LA, April 9, 2011.

Spector, J. M. (2011, September). Science Education Panelist. National Technology Leadership Summit, Washington, DC, 15-16 Sep 2011.

Spector, J. M. (2011, November). Breakfast with champions. Informal presentation at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 10 Nov 2011.

Spector, J. M. (2011, November). A collegial conversation with leading scholars about educational technology, instructional design and the learning sciences. Facilitator and moderator of the session at the Annual Meeting of the Association for Educational Communications and Technology, Jacksonville, FL, 10 Nov 2011.

Spector, J. M. (2013, May). Seminars for tenured faculty, lecturers and graduate students on variety of topics related to educational technology, University of Malaya, Kuala Lumpur, Malaysia, 9-22 May 2013.

Spector, J. M. (2013, July). Evaluating educational technology innovations: Using Logic models to guide evaluation. Invited lecture, East China Normal University, Shanghai, China, 8 July 2013.

Spector, J. M. (2013, July). Designing, conducting and publishing educational technology research. Invited workshop, East China Normal University, Shanghai, China, 8 July 2013.

Spector, J. M. (2013, October). Editors panel. EduSummIT 2013. Washington, D.C., October 2, 21013.

Spector, J. M. (2013, October). Editors panel. National Technology Leadership Summit 2013. Washington, D.C., October 4, 2013.

Spector, J. M. (2014, September). Research leadership panel. National Technology Leadership Summit, Washington, DC, September 2014.

Spector, J. M. (2014, September). Make learn working group. National Technology Leadership Summit, Washington, DC, September 2014.

Spector, J. M. (2014, September). Research leadership panel. National Technology Leadership Summit, Washington, DC, September 2014.

Spector, J. M. (2015, April). The truth they are telling. College of Information Seminar on Information, Denton, TX, April, 2015.

Spector, J. M., & Lin, L. (2015, August). Global Discovery Workshop: UNT-ECNU Collaboration. Workshop organizer and leader, 3-6 August 2015, Denton, Texas.

Spector, J. M. (2015, September). Assessment as, for and of learning in the 21st century. Workshop leader at EduSummit 2015, 14-15 September 2015, Bangkok, Thailand.

Spector, J. M. (2016, January). MOOCs: Potential and pitfalls. Graduate seminar, Beijing Normal University, Beijing, China, 18 January 2016.

Spector, J. M. (2016, May). An evaluation perspective: Provoking systemic change. Invited seminar at East China Normal University, Shanghai, China, May 2106.

Spector, J. M. (2016, May). Academic writing and publishing. Invited seminar at East China Normal University, Shanghai, China, May 2106.

Spector, J. M. (2016, May). Smart learning environments and smart instructional approaches. Invited seminar at Shangrao Normal University, Shangrao, China, May 2016.

Spector, J. M. (2017, October). Research, writing, and publishing. Seminar for doctoral students at East China Normal University, Shanghai, China, October, 2017.

Spector, J. M. (2017, November). I was a presenter on three Presidential Panels at the annual international conference of the Association for Educational Communications and Technology, Jacksonville, FL, November, 2017.

Spector, J. M.,Bhagat, K. K., & Ma, S. (2020, July). Defining, developing and measuring critical thinking. Workshop at the 3rd Pan-Pacific Technology-Enhanced Language Learning & Critical Thinking Meeting. Virtual meeting hosted by UNT via Zoom.

PUBLICATIONS

Technical Reports

Spector, J. M. (1990). *Designing and developing an advanced instructional design advisor* (AFHRL-TP-90-52). Brooks AFB, TX: Human Resources Laboratory, Training Systems Division.

Canfield, A. M., & Spector, J. M. (1991). *A pilot study of the naming transaction shell* (AL-TP-1991-0006). Brooks AFB, TX: Armstrong Laboratory, Human Resources Directorate.

Hickey, A. E., Spector, J. M., & Muraida, D. J. (1991). *Specifications for an advanced instructional design advisor (AIDA) for computer-based training* (AL-TP-1991-0014). Brooks AFB TX: Armstrong Laboratory, Human Resources Directorate.

Polson, M. C., Spector, J. M., & Tennyson, R. D. (1991). *Designing an advanced instructional design advisor: Cognitive science foundations* (Vol. 1 of 6) (AL-TP-1991-007). Brooks AFB TX: Armstrong Laboratory, Human Resources Directorate.

Halff, H. M., & Spector, J. M. (1991). *Designing an advanced instructional design advisor: Possibilities for automation* (Vol. 3 of 6) (AL-TP-1991-008). Brooks AFB, TX: Armstrong Laboratory, Human Resources Directorate.

Friedman, A., Polson, M. C., & Spector, J. M. (1991). *Designing an advanced instructional design advisor: Incorporating visual materials and other research issues* (Vol. 4 of 6) (AL-TP-1991-0017). Brooks AFB, TX: Armstrong Laboratory, Human Resources Directorate.

Merrill, M. D., & Spector, J. M. (1991). *Designing an advanced instructional design advisor: Transaction shell theory* (Vol. 6 of 6) (AL-TP-1991-0017). Brooks AFB TX: Armstrong Laboratory, Human Resources Directorate.

Hickey, A. E., Spector, J. M., & Muraida, D. J. (1991). *Design specifications for the advanced instructional design advisor (AIDA)* (Volumes 1 and 2). AL-TR-1991-0085). Brooks AFB TX: Armstrong Laboratory, Human Resources Directorate.

Spector, J. M., Dunnagan, C. B., Christensen, D. L., & Tennyson, R. D. (1996). *Evaluation of guidance for designing adaptive open-ended training systems*. Brooks AFB, TX: Armstrong Laboratory, Human Resources Directorate.

Spector, J. M., & Davidsen, P. I. (1997). *Constructing effective interactive learning environments using system dynamics methods and tools: Interim report*. EIST Report 97-1. University of Bergen, Norway: Educational Information Science and Technology Research Program.

Spector, J. M., Doughty, P. L., & Yonai, B. A. (2003). *Cost and learning effects of alternative e-collaboration methods in online settings* (Final report for the Andrew W. Mellon Foundation Cost Effective Use of Technology in Teaching Initiative). Syracuse, NY: Syracuse University.

Spector, J. M., & Koszalka, T. A. (2004). *The DEEP methodology for assessing learning in complex domains* (Final report to the National Science Foundation Evaluative Research and Evaluation Capacity Building). Syracuse, NY: Syracuse University.

Shute, V. J., & Spector, J. M. (2009). Stealth Assessment in Virtual Worlds. Invited white paper for Advanced Distributed Learning. Retrieved on June 14, 2010 from http://www.adlnet.gov/Technologies/Evaluation/Library/Additional%20Resources/LETSI%20White%20Papers/Shute%20-%20Stealth%20Assessment%20in%20Virtual%20Worlds.pdf

Refereed Journal Articles (partial list)

Spector, J. M. (1990). Designing an interdisciplinary AI course. *Journal of Computing in Small Colleges*, *5*(5), 141-150.

Muraida, D. J., & Spector, J. M. (1990). The advanced instructional design advisor. *Educational Technology*, *30*(3), 66-67.

Spector, J. M., & Muraida, D. J. (1991). Evaluating transaction theory. *Educational Technology*, *31*(10), 29-35.

Spector, J. M. (1991). Methods for transferring results in innovative research in computer-based instruction to academia and industry. *Journal of Computing in Small Colleges*, *6*(5), 53-58.

Spector, J. M., & Muraida, D. J. (1991). Automating the design and delivery of computer-based instruction. *Journal of interactive Development*, *4*(2), 25-30.

Spector, J. M., Muraida, D. J., & Marlino, M. R. (1992), Cognitively based models of courseware development. *Educational Technology Research and Development*, *40*(2), 45-54.

Spector, J. M., Gagné, R. M., Muraida, D. J., & Dimitroff, W. A. (1992). Intelligent frameworks for instructional design. *Educational Technology*, *32*(9), 45-50.

Muraida, D. J., & Spector, J. M. (1993). The advanced instructional design advisor. *Instructional Science*, *21*(4), 239-253.

Spector, J. M. (1994). A review of computers for social change. *Computers in Human Behavior*, *10*(3), 411-413.

Gros, B., & Spector, J. M. (1994). Evaluating automated instructional design systems: A complex problem. *Educational Technology, 34*(5), 37-46.

Grimstad Group (1995). Applying system dynamics to courseware development. *Computers in Human Behavior*, *11*(2), 325-339. (The Grimstad Group consists of P. I. Davidsen, J. J. Gonzalez, D. J. Muraida, J. M. Spector, and R. D. Tennyson.)

Spector, J. M. (on behalf of the Grimstad Group) (1995). Using system dynamics to model courseware development: The project dynamics of complex problem solving. In K. M. George, J. J. Carrol, E. Deaton, D. Oppenheim, & J. Hightower (Eds.), *Proceedings of the 1995 ACM Symposium on Applied Computing*. New York: ACM Press.

Spector, J. M. (on behalf of the Grimstad Group) (1995). Applying system dynamics to courseware development. *Computers in Human Behavior, 11*(2*), 325-339.

Gros, B., Elen, J., Kerres, M., Merriënboer, J. J. G., & Spector, M. (1996). Instructional design and the authoring of multimedia and hypermedia systems: Does a marriage make sense? *Educational Technology*.

Spector, J. M., & Davidsen, P. I. (1996). Creating engaging courseware using system dynamics: The ISD Project Management Tutor. In P. Carlson & F. Makedon (Eds.), *Educational multimedia and hypermedia, 1996*. Boston: Association for the Advancement of Computing in Education.

Spector, J. M. (1996). Creativity and constructivity in learning environments. *Educational Media International*, *33*(2), 55-59.

Spector, J. M., Arnold, E. M., & Wilson A. S. (1996). A Turing test for automatically generated instruction. *Journal of Structural Learning, 12*(4), 310-313.

Spector, J. M., & Davidsen, P. I. (1997). Creating engaging courseware using system dynamics. *Computers in Human Behavior*, *13*(2), 127-155.

Spector, J. M. (1997). Information technologies and the information superhighway: Guest editor's introduction. *Computers in Human Behavior*, *13*(2), 111-115.

Davidsen, P. I., & Spector, J. M. (1997). Cognitive complexity in system dynamics based learning environments. In Y. Barlas, V. G. Diker, & S. Polat (Eds.), *Systems Dynamics Proceedings: Systems approach to learning and education in the 21st Century* (Vol. 2) (pp. 757-760). Istanbul: Bogaziçi University.

Spector, J. M. (1997). Norwegian perspectives on computing in complex domains – guest editor of special issue. *Computers in Human Behavior*, *13*(4).

Spector, J. M. (1998). The role of epistemology in instructional design. *Instructional Science,* 26, 193-203.

Spector, J. M. (1998). The future of instructional theory: A synthesis of European & American perspectives. *Journal of Structural Learning and Intelligent Systems*, *13*(2), 115-128.

Spector, J. M., & Davidsen, P. I. (1998). Constructing learning environments using system dynamics. *Journal of Courseware Engineering*, *1*, 5-11.

Spector, J. M. (2000). Intelligence performance support for courseware engineering. *Journal of Structural Learning and Intelligent Systems*.

Spector, J. M. (2000). System dynamics and interactive learning environments: Lessons learned and implications for the future. *Simulation and Gaming, 31*(4), 528-535.

Tennyson, R. D., & Spector, J. M. (2000). Goals for automating instructional systems: A review of issues for research. *Journal of Structural Learning and Intelligent Systems.*

Spector, J. M. (2000). Towards a philosophy of instruction. *Educational Technology & Society, 3*(3), 522-525.

Goodyear, P., Salmon, G., Spector, J. M., Steeples, C., & Tickner, S. (2001). Competences for online teaching: A special report**.** *Educational Technology Research & Development 49*(1), 65-72.

Spector, J. M. (2001). Philosophical implications for the design of instruction. *Instructional Science 29* (4), 381-402.

Spector, J. M., Christensen, D. L., Sioutine, A. V., & McCormack, D. (2001). Models and simulations for learning in complex domains: Using causal loop diagrams for assessment and evaluation. *Computers in Human Behavior, 17*, 517-545.

Spector, J. M. (2001). An overview of progress and problems in educational technology. *Interactive Educational Multimedia 3*, 27-37.

Spector, J. M. (2001). A philosophy of instructional design for the 21st century? *Journal of Structural learning and Intelligent Systems, 14*(4), 307-318.

Spector, J. M. (2001). Tools and principles for the design of collaborative learning environments for complex domains. *Journal of Structural learning and Intelligent Systems 14*(4), 483-510.

Spector, J. M., & Wang, X. (2002). Integrating technology into learning and working: Introduction. *Education, Technology and Society* [Online serial], *5*(1). Available at http://ifets.ieee.org/periodical/vol_1_2002/v_1_2002.html

Spector, J. M., & Wang, X. (2002). Integrating technology into learning and working: Introduction. *Education, Technology and Society* [Online serial], *5*(2). Available at http://ifets.ieee.org/periodical/vol_2_2002/v_2_2002.html

Spector, J. M. (2002). Knowledge management tools for instructional design. *Educational Technology Research & Development, 50*(4), 37-48.

Spector, J. M., de la Teja, I., Lundgren-Cayrol, K., & Ganesan, R. (Eds.) (2003). Evaluating educational technology. Special issue of *Evaluation and Program Planning*, *26*(2), 163-224.

de la Teja, I., Lundgren-Cayrol, Ganesan, R., & Spector, J. M. (2003). An introduction to issues in the evaluation of educational technology: International perspectives. *Evaluation and Program Planning, 26*(2), 163-169.

Doughty, P. L., Spector, J. M., & Yonai, B. (2003). Time, efficacy and cost considerations of e-collaboration in online university courses. *Brazilian Review of Open and Distance Learning, 2*(1). Available at http://www.abed.org.br/publique/cgi/cgilua.exe/sys/start.htm

Spector, J. M. (2003). Cost and learning issues with online instruction. *Wirtualna Edukacja, 17.* Available at http://lttf.ieee.org/we/

Spector, J. M. (2004). Problems with problem-based learning: Comments on model-centered learning and instruction in Seel (2003). *Technology, Instruction, Cognition and Learning, 1*(4), 359-374.

Spector, J. M. (2005). Time demands in online instruction. *Distance Education*, *26*(1), 3-25.

Wang, X., Dannenhoffer, J. F. III, Davidson, B. D., & Spector, J. M. (2005). Design issues in a cross-institutional collaboration on a distance education course. *Distance Education, 26*(3), 405-423.

Spector, J. M., Dennen, V. P., & Koszalka, T. A. (2005). Causal maps, mental models and assessing acquisition of expertise. *Technology, Instruction, Cognition and Learning, 3*(1-2).

Spector, J. M., & Davidsen, P. I. (2006). How can organizational learning be modeled and measured. *Evaluation and Program Planning*, *29*(1), 63-69.

Spector, J. M. (2006). Introduction to the special issue on models, simulations and learning in complex domains. *Technology, Instruction, Cognition and Learning, 3*(3-4), 199-204.

Spector, J. M. (2006). A methodology for assessing learning in complex and ill-structured task domains. *Innovations in Education and Teaching International, 43*(2), 109-120.

Kinshuk, Sampson, D. G., Isaias, P., Spector, J. M., & Schrum, L. (2007). A critical view of technology-enhanced learning in the digital age. *Journal of Research on Technology in Education, 40*(1), 1-3.

Spector, J. M. (2008). Cognition and learning in the digital age: Promising research and practice. *Computers in Human Behavior, 24*(2), 249-262.

Kinshuk, Spector, J. M., & Sampson, D. G., P. Isaias, & D. Ifenthaler (Eds.) (2008). Special issue on cognition and learning in the digital age. *Computers in Human Behavior, 24*(2).

Spector, J. M. (2008). A review of concept mapping for planning and evaluation. *Evaluation and Program Planning*, 31, 217-221.

Spector, J. M., & Merrill, M. D. (Eds.). (2008). Special issue: Effective, efficient and engaging (E^3) learning in the digital age. *Distance Education, 29*(2).

Spector, J. M., & Merrill, M. D. (2008). Editorial: Effective, efficient and engaging (E^3) learning in the digital age. *Distance Education, 29*(2), 123 – 126.

Spector, J. M. (2009). Reconsidering the notion of distance in distance education. *Distance Education, 30*(1), 157-162.

Shute, V. J., Jeong, A. C., Spector, J. M., Seel, N. M., & Johnson, T. E. (2009). Model-based methods for assessment, learning, and instruction: Innovative educational technology at Florida State University. In M. Orey (Ed.), *2009 Educational Media and Technology Yearbook* (pp. 61-80). Westport, CT: Greenwood Publishing Group.

Spector, J. M. (2009). Reflections on Ian Mitchell's remarks about the birth of distance education. *Distance Education, 30*(1)., 157-161.

Bawane, J., & Spector, J. M. (2009). Prioritization of online instructor roles: Implications for competency-based teacher education programs. *Distance Education*, *30*(3), 383-397.

Gogus, A., Koszalka, T. A., & Spector, J. M. (2009). Assessing conceptual representations of ill-defined problems. *Technology, Instruction, Cognition and Learning*, *7*(1), 1-20.

Bull, G., Maddox, C., Marks, G., McAnear, A., Schmidt, D., Schrum, L., Smaldino, S., Spector, J. M., Sprague, D., & Thompson, A. (2010). Educational implications of the digital fabrication revolution. *Journal of Research on Technology in Education, 42*(4) 331-338.

Pirnay-Dummer, P., Ifenthaler, D., & Spector, J. M. (2010). Highly integrated model assessment technology and tools. *Educational Technology Research & Development, 58*(1), 3-18.

Hartley, R., Kinshuk, Koper, R., Okamoto, T., & Spector, J. M. (2010). The education and training of learning technologists: A competences approach. *Educational Technology & Society, 13*(2), 206-216.

Savenye, W. C., & Spector, J. M. (2010). The future of adaptive tutoring and personalized instruction: Introduction to the special issue. *Technology, Instruction, Cognition, & Learning, 8*(2), 97-101.

Lee, J., & Spector, J. M. (2012). Effects of model-centered instruction on effectiveness, efficiency, and engagement with ill-structured problem solving. *Instructional Science, 40*, 537-557.

Spector, J. M., & Kim, C. (2012). A model-based approach for assessment and motivation. *Computer Science and Information Systems, 9*(2). DOI: 10.2298/CSIS111226016S

Spector, J. M. (2013). Emerging educational technologies and research directions. *Educational Technology & Society, 16*(2), 21-30.

Kim, C., Kim, M., Lee, C., Spector, J. M., & DeMeester, K. (2013). Teacher pedagogical beliefs and technology integration. *Teaching and Teacher Education*, 29, 76-85.

Wang, M., Wu, B., Kinshuk, Chen, N., & Spector, J. M. (2013). Connecting problem-solving and knowledge-construction processes in a visualization-based learning environment. *Computers and Education*, 68, 293-306.

Spector, J. M. (2013). Emerging educational technologies and research directions. *Educational Technology & Society, 16*(2), 21-30.

Spector, J. M. (2013). Emerging educational technologies: Tensions and synergy. *Journal of King Saud University - Computer and Information Sciences*,*14*(1), 5-10. DOI 10.1016/j.ksuci.2013.10.009.

Wu, B., Wang, M., Spector, J. M., & Yang, S. J. H. (2013). Design of a dual-mapping learning approach for problem solving and knowledge construction in ill-structured domains. *Educational Technology and Society*, *16*(4), 71-84.

Cheng, B., Wang, M., Mørch, A., Chen, N-S., & Spector, J. M. (2014). Research on e-learning in the workplace 2000-2012: A bibliometric analysis of the literature. *Educational Research Review, 11,* 56-72.

Spector, J. M., Johnson, T. E., & Young, P. A. (2014). An editorial on research and development in and with educational technology. *Educational Technology Research & Development, 62*(1), 1-12.

Spector, J. M. (2014). Remarks on MOOCs and mini-MOOCs. *Educational Technology Research & Development, 62*(3), 385-392.

Taminiau, E., Kester, L., Corbalan, G., Spector, J. M., Kirschner, P., & van Merriënboer, J. J. G. (2014). Designing an on-demand learning environment for the simultaneous development of domain-specific skills and self-directed learning skills. *Journal of Computer Assisted Learning, 31*(5), 405-421. doi: 10.1111/jcal.12076

Spector, J. M., & Kim, C. (2014). Technologies for intentional learning: Beyond a cognitive perspective. *Australian Journal of Education*, *58*(1), 9-22.

Spector, J. M., Yuen, H. K., Wang, M., Churchill, D., & Law, N. (2014). Hong Kong perspectives on educational technology research and practice. *Educational Technology, 54*(5), 35-41.

Spector, J. M., Johnson, T. E., & Young, P. A. (2014). An editorial on research and development in and with educational technology. *Educational Technology Research & Development, 62*(2), 1-12.

Cen. doi:10.1186/s40561-014-0002-7**.** Retrieved from http://www.slejournal.com/content/1/1/2

Spector, J. M., Johnson, T. E., & Young, P. A. (2015). An editorial on replication studies and scaling up efforts. *Educational Technology Research & Development, 63*(2), 1-4. Retrieved from http://link.springer.com/article/10.1007/s11423-014-9364-3?sa_campaign=email/event/articleAuthor/onlineFirst

Natividad, G., Mayes, R., Choi, J-I, & Spector, J. M. (2015). Balancing stable educational goals with changing educational technologies. *E-Mentor*, *1*(58). Retrieved from http://www.e-mentor.edu.pl/artykul/index/numer/58/id/1160

Spector, J. M. (2015). The changing nature of educational technology programs. *Educational Technology, 55*(2), 19-25.

Lin, L., Ross, H., O'Connor, B., & Spector, J. M. (2015). Intentionality and wisdom in language information and technology. *Educational Technology*, *55*(4), 35-39.

Mayes, R., Natividad, G., & Spector, J. M. (2015). Challenges for educational technologists in the 21st century. *Education Sciences*, 5(3), 221-237. Retrieved from http://www.mdpi.com/2227-7102/5/3/221

Davidsen, P. I., & Spector, J. M. (2015). Critical reflections: Symposium on system dynamics. *Simulation & Gaming, 46*(3-4), 430-444.

Ifenthaler, D. Sampson, D. G., & Spector, J. M. (2015). Interactions between cognitive psychology, educational technology and computing in the digital age. *Technology, Knowledge and Learning, 20*(2), 129-131.

Voogt, J., … Spector, J. M., … (2016). Technology enhanced quality learning for all: The EDUSummIT 2015 call to action. *Proceedings of SITE 2016* (797-799).

Milman, N., … Spector, J. M., … (2016). A revised replication study typology and a call for participation: Replication studies involving technology and teacher education. *Proceedings of SITE 2016* (1115-1119).

Spector, J. M. (2016). Smart learning environments: concepts and issues. *Proceedings of SITE 2016.* Savannah, GA: AACE SITE.

Spector, J. M., Ifenthaler, D., Sampson, D., et al. (2016). Technology enhanced formative assessment for 21st century learning. *Educational Technology & Society, 19*(3), 58-71. Retrieved from http://www.ifets.info/issues.php?show=current

Spector, J. M. (2016). Ethics in educational technology: Towards a framework for ethical decision making in and for the discipline. *Educational Technology Research & Development, 64*(5), 1003-1011.

Spector, J. M., Ifenthaler, D., & Sampson, D. G. (2016). Digital systems supporting cognition and exploratory learning in twenty-first century. *Journal of Computing in Higher Education, 28*, 301-306.

Spector, J. M. (2016). Thinking about educational technology and creativity. *Educational Technology, 56*(6), 5-8.

Bull, G., Thompson, A. D., Schmidt-Crawford, D., Garofalo, J., Hodges, C., & Spector, J. M., Ferdig, R. E., Edyburn, D. & Kinshuk (2016). Evaluating the impact of educational technology. *Journal of Digital Learning in Teacher Education, 32*(4). Retrieved from http://www.tandfonline.com/doi/full/10.1080/21532974.2016.1217052

Bhagat, K. K., & Spector, J. M. (2017). Formative assessment in complex problem-solving domains: The emerging role of assessment technologies. *Educational Technology & Society, 20*(4), 312-317. Retrieved from http://www.ifets.info/journals/20_4/27.pdf

Liu, H., Ludu, A, Klein, J., Spector, J. M., & Ikle. M. (2017). Innovative model, tools and learning environments to promote active learning for undergraduates in computational science & engineering. *Journal of Computational Science Education, 8(*3), 11-18.

Ifenthaler, D., Sampson, D. G., & Spector, J. M. (2017). Linking analytics data and digital systems for supporting cognition and exploratory learning in the 21st century. *Computers in Human Behavior*, *78*, 348-350.

Bull, G., Spector, J. M., Persichitte, K. (2017). Preliminary recommendations regarding preparation for teachers and school leaders to use learning Technologies. *Contemporary Issues in Technology and Teacher Education, 17* (1), 1-9.

DeWitt, D., Alia, N., Siraj. S. & Spector, J.M. (2017). Wikis for a collaborative solving (CPS) module for secondary school science. *Educational Technology & Society, 20*(1), 144-155.

Bull, G., Spector, J. M., Persichitte, K., & Meiers, E. (2018). Reflections on preparing educators to evaluate the efficacy of educational technology: An interview with Joseph South. *Contemporary Issues in Technology and Teacher Education, 17*(1), 11-16.

Spector, J. M. (2018). The potential of smart technologies for learning and instruction. *International Journal of Smart Technology & Learning, 1* (1).

Bhagat, K. K., Liou, W-K., Spector, J. M., & Chang, C-Y. (2018). To use augmented reality or not in formative assessment: A comparative study. *Interactive Learning Environments*, 26. doi: 10.1080/10494820.2018.1489857

Wang, M., Kirschner, P., Spector, J. M., & Ge, X. (2018). Computer-based learning environments for deeper learning in problem-solving contexts. *Computers in Human Behavior*, *87*, 403-405. https://doi.org/10.1016/j.chb.2018.01.024

Liu, H., Spector, J. M., & Ikle, M. (2018), Computer technologies for model-based collaborative learning: A research- based approach with initial findings. *Computer Applications in Engineering Education, 26*(5), 1383-1392. . DOI:10.1002/cae.22049

Lin, L., & Spector, J. M. (2018). A report on the AECT Sponsored symposium entitled "the Human-Technology Frontier: Understanding the Learning of Now to Prepare for the Work of the Future.".*TechTends, 62*(4), 438-440.

Ifenthaler, D., Sampson, D. G., Spector, J. M., & Isaías, P. (2018). Challenges of implementing data analytics in productive education systems for supporting cognition and exploratory learning in the 21st century. *Interactive Technology and Smart Education*, *15*(4).

Bhagat, K. K., & Spector, J. M. (2018). A bibliometric analysis of six years of research on flipped classrooms. Proceedings of the IEEE 18th International Conference on Advanced Learning Technologies (ICALT). Mumbai, India: ICALT. Retrieved from https://ieeexplore.ieee.org/abstract/document/8433444

Ifenthaler, D., Sampson, D. G., Spector, J. M., & Isaías, P. (2018). Challenges of implementing data analytics in productive education systems for supporting cognition and exploratory learning in 21st century. *Interactive Technology and Smart Education, 15*(4), 294-297.

Islam, A. Y. M. A., Mok, M. M. C, Gu, X, Spector J. M., & Hai-Leng, C. (2019). ICT in higher education. An exploration of practices in Malaysian universities. *IEEE Access*. DOI: **10.1109/ACCESS.2019.2895879**

Ghani, U., Zhai, X,, Spector, J. M., Chen, N-S., Lin, L., Ding, D., & Usman, M. (2019). Knowledge hiding in higher education: Role of interactional justice and professional commitment. *Journal of Higher Education*. doi: https://doi.org/10.1007/s10734-019-00412-5

Spector, J. M., & Ma, S. (2019). Inquiry and critical thinking skills for the next generation: From artificial intelligence back to human intelligence. *Smart Learning Environments*. doi: https://slejournal.springeropen.com/articles/10.1186/s40561-019-0088-z

Guo, J., Islam, A. Y.M,, Teo, T., & Spector, J. M. (2019). Computer-enabled visual creativity: An empirically-based model with implications for learning and instruction. Instructional Science, *47*. DOI: 10.1007/s11251-019-09487-0

Islam, A. Y. M., Gu, X., & Spector, J. M. (2020). *A study of Chinese technical and vocational college teachers' adoption and gratification in new technologies. British Journal of Educational Technology, 51*(2).

Wang, X., Lin, L., Han, M., & Spector, J. M. (2020). Impact of cues on learning: Using eye-tracking technologies to examine the functions and designs of added cues in short instructional videos. *Computers in Human Behavior*, (accepted for publication).

Yu, X., Wang, C. X., & Spector, J. M. (2020). Factors that impact social networking in online self-regulated learning activities. *Education Technology Research & Development, 68*, 3077–3095. https://doi.org/10.1007/s11423-020-09843-9

Spector, J. M. (2020). Remarks on progress in educational technology. *Educational Technology Research & Development , 68(*3), 533-36.

Islam, A.Y. M. Gu, X., Crook, C., & Spector, J. M. (2020). Assessment of ICT in tertiary education applying structural equation modeling and Rasch model. *User Modeling and User-Adapted Interaction*. Sage Open. https://doi.org/10.1177/2158244020975409

Lan, Y-J., Gupta, K. C-L., Huang, T-Y., Chelliah, S., & Spector, J. M. (2021). Organizing and hosting virtual PPTELL 2020 during the COVID-19 pandemic. Educational Technology & Society, 245(1). 64-74. Retrieved from https://drive.google.com/file/d/1KFBe5lZRKLoNkPOX8I7QxDdaFNPYRK6D/view

Spector, J. M., & Harris, P/ (2021). Reflective comments on shifting to digital. Educational Technology Research & Development. 69. 415-416. DOI https://doi.org/10.1007/s11423-021-09961-y

Islam, A.Y. M., Gu, X., & Spector, J. M. (2021). Online learning Satisfaction in Higher Education during the COVID-19 Pandemic: A Regional Comparison between Eastern and Western Chinese Universities. *Education and Information Technologies*.

Shenshack, A., Kinshuk, Spector, J. M. (2021). A comprehensive analysis of personalized learning components. *Journal of Computers in Education.* https://doi.org/10.1007/s40692-021-00188-7

Christensen, R., Hodges, C. B., &Spector, J. M. (2021). *A framework for classifying replication studies in educational technologies research*. *Technology, Knowledge and Learning,* Retrieved from https://doi.org/10.1007/s10758-021-09532-3

Islam, A., Gu, X., Spector, J. M., Chen, S. (2022). Technology-enabled e-learning platforms in Chinese higher education during the pandemic year of COVID-19. (2022). Sage Open, 21. [Manuscript ID SO-21-1398.R1]

Zhai, X., Chu, X., Meng, N., Wang, M. Spector, M., Tsai, C-C, & Liu. H. (2022), The effect of multi-mode stimuli of feedforward and eye tracking on metacognition: An exploratory study using digital dictionaries. *Educational Technology & Society, 25*(1), 213-227. Retrieved from https://drive.google.com/file/d/1ByAXfgTvImhMf2jhde3sTrne93WZxrXD/view

Islam, A. Y. M., Li, Z., & Spector, J. M. (in press). Unpacking mobile learning in higher vocational education during the COVID-19 pandemic. *International Journal of Mobile Communication*.

Books/Book Chapters (partial list)

Spector, J. M. (1986). Programming languages. In J. M. Brown, B. Boyd, C. Olander, & C. McDade, (Eds.), *Curriculum Voices* (1st ed.). Acton, MA: Copley Publishing Group.

Spector, J. M. (1989). Careers in the computer age. In J. M. Brown, B. Boyd, C. Olander, & C. McDade, (Eds.), *Curriculum Voices* (2nd ed.). Acton, MA: Copley Publishing Group.

Spector, J. M. (1993). Automating instructional design: Introduction. In J. M. Spector, M. C. Polson, & D. J. Muraida (Eds.), *Automating instructional design: Concepts and issues* (pp. ix – xxii). Englewood Cliffs, NJ: Educational Technology.

Spector, J. M. (1993). Approaches to automating instructional design: Introductory remarks. In J. M. Spector, M. C. Polson, & D. J. Muraida (Eds.), *Automating instructional design: Concepts and issues* (pp. 63-66). Englewood Cliffs, NJ: Educational Technology.

Spector, J. M. (1993). Approaches to automating instructional design: Implications for intelligent instructional assistance. In J. M. Spector, M. C. Polson, & D. J. Muraida (Eds.), *Automating instructional design: Concepts and issues* (pp. 213-214). Englewood Cliffs, NJ: Educational Technology.

Spector, J. M. (1993). Automating instructional design: Conclusion. In J. M. Spector, M. C. Polson, & D. J. Muraida (Eds.), *Automating instructional design: Concepts and issues* (pp. 325-328). Englewood Cliffs, NJ: Educational Technology.

Spector, J. M., Polson, M. C., & Muraida, D. J. (Eds.) (1993). *Automating instructional design: Concepts and issues*. Englewood Cliffs, NJ: Educational Technology.

Spector, J. M. (1994). Integrating instructional science, learning theory, and technology. In R. D. Tennyson (Ed.), *Automating instructional design, development, and delivery* (pp. 243-260). Brussels, Belgium: Springer-Verlag.

Tennyson, R. D., Spector, J. M., & Muraida, D. J. (1994). Automation and instructional system development. In R. D. Tennyson (Ed.), *Automating instructional design, development, and delivery* (pp.1-6). Brussels,

Belgium: Springer-Verlag.

Spector, J. M. (1995). Integrating and humanizing the process of automating instructional design. In R. D. Tennyson & A. Barron (Eds.), *Automating instructional design: Computer-based development and delivery tools* (pp. 523-546). Brussels, Belgium: Springer-Verlag.

Spector, J. M., & Song, D. (1995). Automated instructional design advising. In R. D. Tennyson & A. Barron (Eds.), *Automating instructional design: Computer-based development and delivery tools* (pp. 377-402). Brussels, Belgium: Springer-Verlag.

Tennyson, R. D., & Spector, J. M. (1995). Automating instructional design: An introduction. In R. D. Tennyson & A. Barron (Eds.), *Automating instructional design: Computer-based development and delivery tools* (pp. 1-10). Brussels, Belgium: Springer-Verlag.

Grimstad Group (1995). Report of the Grimstad group (P. I. Davidsen, J. J. Gonzalez, D. J. Muraida, J. M. Spector, & R. D. Tennyson). In R. D. Tennyson & A. Barron (Eds.), *Automating instructional design: Computer-based development and delivery tools* (pp. 603-610). Brussels, Belgium: Springer-Verlag.

Spector, J. M., & Muraida, D. J. (1997). Automating instructional design. In S. Dijsktra, N. Seel, F. Schott, & R. D. Tennyson (Eds.), *Instructional design: International perspectives* (Vol. 2, Solving instructional design problems) (pp. 59-81). Hillsdale, NJ: Lawrence Erlbaum Associates.

Spector, J. M. (1999). Intelligent support for instructional development: Approaches and limits. In J. Akker, N. Nieveen, & T. Plomp (Eds.), *Design methodology and developmental research in education and training* (pp. 279-290). Dordrecht: Kluwer.

Spector, J. M. (2000). Gagné's influence on military training research and development. In R. Richey (Ed.), *The legacy of Robert M. Gagné*. Syracuse (pp. 211-228). New York: ERIC-IT Clearing House and ibstpi.

Spector, J. M., & Davidsen, P. I. (2000). Designing technology enhanced learning environments. In B. Abbey (Ed.), *Instructional and cognitive impacts of web-based education* (pp. 241-260). Hershey, PA: Idea Group Publishing.

Spector, J. M. (2000). Building theory into practice in learning and instruction. In J. M. Spector & T. M. Anderson (Eds.), *Integrated & holistic perspectives on learning, instruction & technology: Understanding complexity* (pp. 79-90). Dordrecht, The Netherlands: Kluwer.

Spector, J. M., & Anderson, T. M. (Eds.) (2000). *Integrated and holistic perspectives on learning, instruction and technology: Understanding complexity*. Dordrecht: Kluwer Academic Press.

Spector, J. M., & Davidsen, P. I. (2001). Cognitive complexity in decision making and policy formulation: A system dynamics perspective. In R. Sanchez & A. Henee, *A systems perspective on resources, capabilities and management processes* (pp. 155-171). Amsterdam: Elsevier Science.

Spector, J. M. (2001). Foreword. In C. Jones & C. Steeples (Eds.), *Networked learning in higher education* (pp. xiii-xvii). Berlin: Springer-Verlag.

Ganesan, R., Edmonds, G. S., & Spector, J. M. (2001). The changing nature of instructional design for networked learning. In C. Jones & C. Steeples (Eds.), *Networked learning in higher education* (pp. 93-109). Berlin: Springer-Verlag.

Richey, R. C., Fields, D. C., & Foxon, M. with Roberts, R. C., Spannaus, T., & Spector, J. M. (2001). Instructional design competencies: The standards (3rd ed.). Syracuse, NY: ERIC Clearinghouse on Information and Technology.

Milrad, M., Spector, J. M., & Davidsen, P. I. (2003). Model facilitated learning. In S. Naidu (Ed.), *Learning and teaching with technology: Principles and practices* (pp. 13-27). London: Kogan Page.

Small, R. V., Ohrazda, C., Revercomb, P., & Spector, J. M. (2002). Fostering library media specialist-educational technologist collaboration. In M. A. Fitzgerald, M. Orey, R. M. Branch (Eds.), *Educational media and technology yearbook, 2003*. Littleton, CO: Libraries Unlimited, Inc.

Spector, J. M., & Ohrazda, C. (2003). Automating instructional design: Approaches and limitations. In D. H. Jonassen (Ed.), *Handbook of research in educational communications and technology* (2nd ed.) (pp. 685-699). Bloomington, IN: Association for Educational Communications and Technology.

Spector, J. M. (2004). Multiple uses of information and communication technology in education. In N. Seel & S. Dijkstra (Eds.), *Curriculum, plans and processes of instructional design*. Mahwah, NJ: Erlbaum.

Morgan, K., & Spector, J. M. (Eds.) (2004). *The Internet society: Advances in learning, commerce and society*. Southampton UK: Wessex Institute of Technology Press.

Klein, J. D., Spector, J. M., Grabowski, B., & de la Teja, I. (2004). *Instructor competencies: Standards for face-to-face, online and blended settings*. Greenwich, CT: Information Age Publishing.

Spector, J. M. (2004). Current issues in new learning. In K. Morgan, C. A. Brebbia, J. Sanchez, & A. Voiskounsky (Eds.), *Human perspectives in the Internet Society: Culture, psychology and gender* (pp. 429-440). Southampton, UK: WIT Press.

Spector, J. M. (2005). *Innovations in instructional technology: An introduction to this volume*. In J. M. Spector, C. Ohrazda, A. Van Schaack, & D. A. Wiley, (Eds.) (2005), *Innovations in instructional technology: Essays in honor of M. David Merrill* (pp. xxxi-xxxvi). Mahwah, NJ: Erlbaum.

Spector, J. M., Ohrazda, C., Van Schaack, A., & Wiley, D. A. (Eds.) (2005). *Innovations in instructional technology: Essays in honor of M. David Merrill*. Mahwah, NJ: Erlbaum.

Schwier, R., Hill, J., Wager, W., & Spector, J. M. (2006). Where have we been and where are we going?

Limiting and liberating forces in IDT. In M. Orey, V. J. McLendon, & R. M. Branch (Eds.), *Educational media and technology yearbook 2006*. Portsmouth, NH: Greenwood.

Morgan, K. M., Brebbia, C. A., & Spector, J. M. (Eds.) (2006). *The Internet Society II: Advances in education, commerce and governance*. Southampton, UK: WIT Press.

Spector, J. M. (2006). From learning to instruction: Adventures and advances in instructional design. In G. Clarebout & J. Elen (Eds.), *Avoiding simplicity, confronting complexity: Advances in studying and designing (computer-based) powerful learning environments* (pp. 15-27). Rotterdam: Sense Publishers.

Spector, J. M. (Ed.) (2007). *Finding your online voice: Stories told by experienced online educators*. Mahwah, NJ: Erlbaum.

Spector, J. M. (2007). Competencies for online educators. In J. M. Spector (Ed.), *Finding your online voice: Stories told by experienced online educators* (pp. 1 – 18). Mahwah, NJ: Erlbaum.

Spector, J. M. (2008). Theoretical foundations. In J. M. Spector, M. D. Merrill, M. D., J. J. G. van Merriënboer, & M. Driscoll, (Eds.), *Handbook of research on educational communications and technology* (3rd ed.; pp. 21-28). New York: Routledge.

Spector, J. M., Merrill, M. D., van Merriënboer, J. J. G., & Driscoll, M. (Eds.) (2008). *Handbook of research on educational communications and technology* (3rd ed.). New York: Routledge.

Ifenthaler, D., Pirnay-Dummer, P., & Spector, J. M. (Eds.) (2008). *Understanding models for learning and instruction: Essays in honor of Norbert M. Seel*. New York, NY: Springer.

Spector, J. M. (2008). What makes good online instruction good. In J. Visser & M. Visser-Valfrey (Eds.), *Learners in a changing learning landscape: Reflections from a dialogue on new roles and expectations* (pp. 251 - 266). Dordrecht: Springer.

Qudrat-Allah, H. Spector, J. M., & Davidsen, P. I. (Eds.) (2008). *Complex decision making: Theory and practice*. Berlin: Springer-Verlag.

Spector, J. M. (2008). Expertise and dynamic tasks. In H. Qudrat-Allah, J. M. Spector, & P. I. Davidsen (Eds.), *Complex decision making: Theory and practice* (pp. 25-37). Berlin: Springer-Verlag.

Spector, J. M. (2008). The fragmented nature of learning and instruction: Remarks on the philosophy of science, the psychology of learning and the design of instruction. In D. Ifenthaler and P. Pirnay-Dummer (Eds.), *Understanding models: Essays in honor of Norbert M. Seel* (pp. 3-22). Berlin: Springer.

Klein, J. D., Grabowski, B., Spector, J. M., & de la Teja, I. (2008). Competencies for instructors: A validation study. In M. Orey, V. J. McLendon, & R. M. Branch (Ed.), *Educational media and technology yearbook 2008*. Portsmouth, NH: Greenwood.

Spector, J. M. (2008). Adventures and advances in instructional design theory and practice. In L. Moller, D. Harvey & J. Huett (Eds.), *Learning and instructional technologies for the 21st century: Visions of the future*. Berlin: Springer.

Spector, J. M. (2008). Complex domain learning. In H. H. Adelsberger, Kinshuk, J. M. Pawlowski, & D. Sampson (Eds.), *Handbook of information technologies for education and training* (pp. 261 – 275). Heidelberg: Springer.

Shute, V. J., Jeong, A. C., Spector, J. M., Seel, N. M., & Johnson, T. E. (2009). Model-based methods for assessment, learning and instruction: Innovative Educational Technology at Florida State University. In M. Orey (Ed.), *2009 Educational Media and Technology Yearbook* (pp. 60-78). Greenwood Publishing Group.

Spector, J. M. (2009). A modeling methodology for assessing learning in complex domains. In P. Blumschein, W. Hung, D. H. Jonassen, & J. Strobel (2009, Eds.), *Model-based approaches to learning: Using systems models and simulations to improve understanding and problem solving in complex domains* (pp. 163-177). Rotterdam, the Netherlands: Sense Publishers.

Johnson, T. E., Ifenthaler, D., Pirnay-Dummer, P. N., & Spector, J. M. (2009). Using concept maps to assess individuals and teams in collaborative learning environments. In P. L. Torres & R. de Cassia Veiga Marriott (Eds.), *Handbook of research on collaborative learning using concept mapping* (pp. 358-382). Hershey, PA: IGI Global.

Spector, J. M., Ifenthaler, D., Isaías, P., Kinshuk, & Sampson, D. (Eds.) (2010). *Learning and instruction in the digital age*. New York, NY: Springer.

Spector, J. M. (2010). Mental representations and their analysis: An epistemological perspective. In D. Ifenthaler, P. Pirnay-Dummer, & N. M. Seel (Eds.), *Computer-based diagnostics and systematic analysis of knowledge* (17-40). New York, NY: Springer.

Ifenthaler, D., Spector, J. M., Kinshuk, Isaías, P., & Sampson, D. (Eds). (2011). *Multiple perspectives on problem solving and learning in the digital age*. New York, NY: Springer.

Spector, J.. M., & Kinshuk (2011). Learning to solve problems in the digital age: Introduction. In D. Ifenthaler, J. M., Spector, Kinshuk, P. Isaías, & D. Sampson (Eds). (2011). *Multiple perspectives on problem solving and learning in the digital age* (pp. 1-10). New York, NY: Springer.

Bu, L., Spector, J. M., & Haciomeroglu, E. S. (2011). Toward model-centered mathematics learning and instruction using GeoGebra. In L. Bu & R. Schoen (Eds.), *Model-Centered Learning: Pathways to mathematical understanding using GeoGebra* (pp. 13-40). Rotterdam: Sense Publishers.

Spector. J. M. (2012). *Foundations of educational technology: Integrative approaches and interdisciplinary*

perspectives. New York: Routledge.

Spector, J. M. (2012). The future of distance learning technology: It's not about the technology and it's not about the distance. In L. Moller and J. B. Huett (Eds.), *The next generation of distance education* (pp. 21-30). New York: Springer.

Spector, J. M., & Park, S. W. (2012). Argumentation, critical reasoning and problem solving. In S. Fee & B. Belland (Eds.), *The role of criticism in understanding problem solving: Essays in memory of John C. Belland* (pp. 13-34). New York: Springer.

Seel, N. M., Spector, J. M., et al. (Eds.) (2012). *The encyclopedia of the sciences of learning*. New York: Springer.

Spector, J. M. (2012). Model-facilitated learning. In N. M. Seel et al., *The encyclopedia of the sciences of learning* (pp. 2316-2317). New York: Springer.

Spector, J. M. (2012). Naturalistic epistemology. In N. M. Seel et al., *The encyclopedia of the sciences of learning* (pp. 2433-2435). New York: Springer.

Spector, J. M. (2012). Wittgenstein on learning. In N. M. Seel et al., *The encyclopedia of the sciences of learning* (pp. 3459-3461). New York: Springer.

Spector, J. M., & Visser, Y. L. (2012). Reflections and a critical review of the perspectives on global trends and issues in distance education. In Y. L. Visser, L. Visser, M. Simonson, & R. Amirault (Eds.), *Trends and issues in distance education: International perspectives* (2nd. ed.). Hershey, PA: IGI Global.

Huang, R., Kinshuk, & Spector, J. M. (Eds.) (2013). *Reshaping learning: The frontiers of learning technology in a global context*. Heidelberg: Springer.

Spector, J. M. (2013). Epistemology. In Anne Runehov & Luis Oviedo (Eds.), *Encyclopedia of sciences and religions*. New York: Springer.

Spector, J. M., Lockee, B. B., Smaldino, S. E., & Herring, M. C. (Eds.) (2013). *Learning, problem solving and mindtools: Essays in honor of David H. Jonassen*. New York: Routledge.

Sampson, D. G., Isaias, P., Ifenthaler, D., & Spector, J. M. (Eds.) (2013). *Ubiquitous and mobile learning in the digital age*. New York: Springer.

Sampson, D. G., Ifenthaler, D., Isaias, P., & Spector, J. M. (Eds.) (2014). *Digital systems for open access to formal and informal learning*. New York: Springer.

Spector, J. M., Merrill, M. D., Elen, J., & Bishop, M. J. (Eds.) (2014). *Handbook of research on educational communications and technology* (4th ed.). New York: Springer.

Spector, J. M. (2014). Program and project evaluation. In J. M. Spector, M. D. Merrill, J. Elen, & M. J. Bishop, (Eds.), *Handbook of research on educational communications and technology* (4th ed.; pp. 195-201). New York: Springer.

Spector, J. M. (Ed.) (2015). *The SAGE Encyclopedia of educational technology*. Thousand Oaks, CA: Sage Publications.

Spector, J. M. (2016). *Foundations of educational technology: Integrative approaches and interdisciplinary perspectives* (2nd ed.). New York: Routledge.

Spector, J. M. (2015). Program evaluation. In J. M. Spector (Ed.), *The SAGE Encyclopedia of educational technology*. Thousand Oaks, CA: Sage Publications.

Spector, J. M. (2015). System dynamics modeling. In J. M. Spector (Ed.), *The SAGE Encyclopedia of educational technology* (pp. 693-697). Thousand Oaks, CA: Sage Publications.

Spector, J. M., & Ren, Y. (2015). History of educational technology. In J. M. Spector (Ed.), *The SAGE Encyclopedia of educational technology* (pp. 335-345). Thousand Oaks, CA: Sage Publications.

Ge, X., Ifenthaler, D., & Spector, J. M. (Eds.) (2015). *Full steam ahead: Emerging technologies for STEAM*. New York: Springer.

Spector, J. M. (2015). Education, training, competencies, curricula and technology: Full STEAM ahead. In X. Ge, D. Ifenthaler, & J. M. Spector (Eds.), *Full steam ahead: Emerging technologies for STEAM* (pp. 3-14). New York: Springer.

Dennen, V. P., & Spector, J. M. (2016). Flipped K-12 classrooms: Implications for teacher preparation, professional development and educational leadership. In M. D. Avgerinou & S. Gialamas (Eds.). *Revolutionizing K-12 blended learning through the i2Flex classroom model* (pp. 38-51). Hershey, PA: IGI Global.

Spector, J. M., & Yuen, H. K. (2016). *Educational technology program and project evaluation*. New York: Routledge.

Spector, J. M., Ifenthaler, D., Sampson, D. G., & Isaias, P. (Eds.) (2016). *Competencies in teaching, learning and educational leadership in the digital age*. New York: Springer.

Spector, J. M. (2016). Program evaluation. In J. M. Spector, B. B. Lockee, & M. D. Childress (Eds.), *Learning, design and technology: An international compendium of theory, research, practice and policy*. New York: Springer.

Tiruneh, D. T., de Cock, M., Spector, J. M., Gu, X., & Elen, J. (2017). Toward a systematic and model-based approach to design learning environments for critical thinking. In J. M. Spector, B. B.; Lockee, & M. D. Childress (Eds.), Learning, design, and technology: An international compendium of theory, research, practice, and policy. New York: Springer.

Lin, L., & Spector. J. M. (Eds.) (2017). *The sciences of learning and instructional design: Constructive articulation between communities*. New York. Routledge.

Persichitte, K., Suparman, A., Spector, J. M., Branch. R. M., Cronje, J. C., Harmon, S. W., & Dousay. T. A. (Eds.) (2018). *Educational technology to improve quality and access on a global scale*. New York: Springer.

Spector, J. M., & Bhagat, K. K. (2018). Promoting and assessing deep learning using technology. In R. Z. Zheng (Ed.), *Strategies for deep learning with digital technology: Theories and practices in education* (pp, 37-50). New York: Nova Science Publishers.

Spector, J. M., & Park, S. W. (2018). *Motivation, learning and technology: Embodied educational motivation*. New York: Routledge.

Chang, M., Popescu, E., Kinshuk, Chen, N.-S., Huang, R., & Spector, J. M. (Eds.) (2018). *Challenges and solutions in smart learning*. Singapore: Springer.

Natividad, G., Spector, J. M., & Evangelopoulos, N. (2018). *An analysis of two decades of educational technology publication*s: Who, what and where. Singapore: Springer.

Hong, L., Warner, T., Ikle, M., Mittal, S., (i.p.). Intelligent computer-supported hybrid collaborative learning environment. *International Journal of Smart Technologies and Learning*.

Spector, J. M. (2019). Complexity, inquiry, critical thinking, and technology: A holistic and developmental approach. In T. Parsons (Ed.), Mind, brain and technology (pp. 17-25). New York: Springer.

Sampson, D., Spector, J. M., Ifenthaler, D., Isaías, P., & Sergis, S. (Eds.) (2019). *Learning technologies for transforming large-scale teaching, learning and assessmen*t. New York: Springer.

Huang, R., Spector, J. M., & Yang, J. (Eds.) (2019). *Educational technology: A primer for the 21st century*. Singapore: Springer.

Ma, S., Bhagat, K. K., Spector, J. M., Lin, L., Liu, D., Leng, J., Tiruneh, D., Mancini, J. (2020). Developing critical thinking: A review of past efforts as a framework for a new approach for childhood learning. In J. M. Spector, B. B. Lockeer, and M. C. Childress (Eds.). *Learning, Design and Technology" An international compendium of theory, research, practice and policy*. New York: Springer. Retrieved from **https://link.springer.com/referencework/10.1007%2F978-3-319-17727-4**

Spector, J. M. (2020). Fostering inquiry, critical thinking and reasoning. In J. Visser & M. Visser (Eds.), *The lifelong pursuit to build the scientific mind* (229-243), Leiden, The Netherlands: Brill.

Wen, Y., Wu, Y-J., Qi, G., Guo, S-C., Spector, J. M.,Chelliah, S., Kinshuk, &Lan, Y-J. (2021). *Expanding global horizons through technology enhanced language learning*. Singapore: Springer.

Ma, S., Spector, J. M., Bhagat, K. K., Tiruneh, D., Mancini, J., Lin, :., Nielsen, R., Liu, D., & Kinshuk (submitted) Smart learning in support of critical thinking: Lessons learned and a theoretically- and research-based framework. In L. Lin, & Spector, J. M. (Eds.), *Proceedings of the TCET International Symposium* [tentative title]. New York: Springer.

Spector, J. M. (2023). In honor of Jeroen van Merriënboer. In University of Twente*, Uber Amicorum: Jeroen van Merriënboer*. University of Twente, The Netherlands.

Huang, R., Kinshuk, Jemni, M., Chen, N-S., and Spector, J. M. (Eds.) (ongoing). *Lecture notes in educational technology*. New York: Springer.

Spector, J. M., Lockee, B. B., & Childress, M. D. (Eds.) (ongoing). *Learning, design and technology: An international compendium of theory, research, practice and policy*. New York: Springer.

Spector, J. M., Morgan, K., & Seel, N. M. (Series Eds.) (ongoing). *Modeling and simulations for learning and instruction* (book series). Rotterdam: Sense Publications.

Spector, J. M., & Lajoie, S. P. (Series Eds.) (ongoing). *Explorations in the learning sciences, instructional systems and performance technologies*. New York: Springer.

Spector, J. M. (Series Ed.) (ongoing). *Integrative approaches to educational technology: Interdisciplinary perspectives on technology in support of learning, performance and instruction*. New York: Routledge.

Proceedings and Other Publications (partial list)

Spector, J. M. (1971). *Data processing utilization system: User's guide*. Technical publication for IBM SDD Laboratory, Boulder, CO.

Spector, J. M. (1978). *Philosophical scepticism*. Unpublished doctoral dissertation, The University of Texas, Austin, TX.

Spector, J. M. (1985). *Robin the robot*. Technical publication for the Jacksonville State University Computer Science Department, Jacksonville, AL.

Spector, J. M. (1986). *Introduction to LOTUS 123*. Technical publication for the Jacksonville State University Management Development Center, Jacksonville, AL.

Spector, J. M. (1987). Ada as a core programming language. *Proceedings of the Small College Computing Consortium*, November, 1987.

Spector, J. M. (1988). Computer languages. *Teaching and Learning with Computers*, Birmingham, AL: ACCE

Publication, April, 1988.

Spector, J. M. (1988). Desktop publishing. *Anniston Star*, Anniston, AL: JSU Business Review, May, 1988.

Spector, J. M. (1988). Use of expert systems in instructional design. *Teaching and Learning with Computers*, Birmingham, AL: ACCE publication, November, 1988.

Spector, J. M. (1988). Ada as a first language. *Proceedings of the Small College computing Consortium*, November, 1988.

Spector, J. M. (1989). Software project management. *Anniston Star*, Anniston, AL: JSU Business Review, April, 1989.

Spector, J. M. (1989). *Refinement considerations for an advanced instructional design advisor* (Research report for AFOSR and the Human Resources Laboratory, RIP Grant, August 1989). Brooks AFB, TX: Technical Training Research Division, Instructional Design Branch.

Spector, J. M. (1989). Expert systems and instructional design. *Proceedings of the 1989 Small College Computing Consortium*, November, 1989.

Spector, J. M. (1990). The logical limitations of neurocomputing. *Proceedings: NASA/CCDS/Auburn University Neural Network Workshop*, February, 1990.

Spector, J. M., Muraida, D. J., & Dallman, B. E. (1990). Establishing instructional strategies for advanced interactive technologies. *Proceedings: Psychology in the DoD twelfth Symposium*, April, 1990.

Spector, J. M., & Muraida, D. J. (1990). Analyzing user interactions with instructional design software.
Proceedings of the Military Testing Association Annual Meeting, November, 1990.

Spector, J. M., Kudla, N. R., & Mitchell, W. M. (1990). Managing computer-based education and training. *Proceedings of the American Society of mechanical Engineers*, November, 1990.

Spector, J. M., & Muraida, D. J. (1991). Automating the design and delivery of computer-based instruction. *Proceedings of the Society of Applied Learning Technology Annual Meeting*, February, 1991.

Spector, J. M. (1992). Artificial Intelligence: Expert systems. *Magill's Survey of Science*. Pasadena, CA: Salem Press.

Spector, J. M., & Muraida, D. J. (1992). The implications of technology for instructional design. *Proceedings of the Ninth International Conference on Technology and Education*. Austin, TX: The University of Texas college of Education.

Spector, J. M. (1993). Computer systems: Digital logic. *Magill's Survey of Physical Science*. Pasadena, CA: Salem Press.

Spector, J. M., & Whitehead, L. K. (1994). A guided approach to instructional design advising. In M. Orey (Ed.), *Proceedings of the Thirty-Fifth ADCIS*, 215-220.

Spector, J. M. (1994). Intelligent performance support for courseware authoring. In T. Ottmann & I. Tomek (Eds.), *Proceedings of ED-Media 94,* 767.

Spector, J. M. (1994). An Air Force perspective on distance learning. In T. Ottmann & I. Tomek (Eds.), *Proceedings of ED-Media 94,* 621.

Spector, J. M. (1994). Ethics: Skepticism. *Magill's Handbook on Ethics. Pasadena, CA: Salem Press*.

Spector, J. M. (1994). Ethics: The meaning of life. *Magill's Handbook on Ethics*. Pasadena, CA: Salem Press.

Spector, J. M. (1995). Review of coping with uncertainty: Insights from the new sciences of chaos, self-organization, and complexity. *System Dynamics Review*, 11 (3), 247.

Spector, J. M., & Davidsen, P. I. (1995, October*). Creating effective courseware: A system dynamics perspective*. Published electronically via ITFORUM, 16-20 October, 1995.

Sorensen, H. B., Arnold, E., & Spector, J. M. (1995). Linking training data with training courseware: The CALS environment. *Proceedings of the Computer-aided Logistics and Logistics (CALS) Europe '95 Conference*. Hamburg: Germany.

Spector, J. M., & Davidsen, P. I. (1997). Constructing interactive learning environments using system dynamics methods and tools. In S. Krogdahl, S. Bjørnestad, A. Jansen, R. Karlsen, E. Mathisen, A. Maus, S. Storøyu, & F. A. Aagesen (Eds.), *Norsk Informatikkonferanse* (NIK), pp. 171-181. Tapir: Voss, Norway.

Spector, J. M. (1998). President's corner. *Journal of Courseware Engineering*, 1, pp. 1-5.

Sioutine, A. V., Davidsen, P. I., & Spector, J. M. (1998). Modeling resource management in instructional system development projects. *Proceedings of the Sixteenth International Conference of the System Dynamics Society*. Québec City, Canada: System Dynamics Society.

Spector, J. M. (1998). A review of 'The Logic of Failure'. *Research Dialogue in Learning and Instruction*, 2, pp. 25-28.

Spector, J. M., Wasson, B., & Lindström, B. (1998). *A Theoretical foundation for the design of online collaborative learning environments*. Invited discussion paper for *VITAL '98*. Available at http://www.trainingplace.com/vital98/papers.html

Davidsen, P. I., Spector, J. M., & Milrad, M. (1999). Learning in and about simple systems. In R. Y. Cavana, J. A. Vennix, E. Rouwette, M. Stevenson-Wright, & J. Cavendish (Eds.), Proceedings of the 17th International Conference of the Systems Dynamics Society and 5th Australian & New Zealand Systems Conference (ISBN 0-9672914-0-2). Wellington, NZ: Webrights.

Spector, J. M. (2000). President's corner. *Journal of Courseware Engineering*, 2, 1-2.

Spector, J. M. (2000). Using a System Dynamics Based Approach for Crisis Management. In M. Dobson & M. Spector (Eds.). *Proceedings of Advanced Instructional Design for Complex Safety Critical & Emergency Training* (pp-4-10). Montreal, Canada: Workshop at ITS 2000, New Conditions of Learning and Training, June 19-23, 2000.

Spector, J. M. (2000). Review of Instructional design: International perspectives. *Research Dialogue in Learning and Instruction 4* (Book Review).

Spector, J. M. (2000, Fall). Trends and issues in educational technology: How far we have not come. *Update Semiannual Bulletin 21*(2). (Published by the ERIC Clearinghouse on Information Technology in the Fall of 2000.

Spector, J. M., & de la Teja, I. (2001, December). Competencies for online teaching. *ERIC Digest EDO-IR-2001-09*. Syracuse, NY: ERIC Information Technology Clearinghouse. Available at http://www.eric.ed.gov/ by searching on the author, title or ERIC # ED456841.

Spector, J. M., & Wang, X. (2002). Integrating technology into learning and working. Guest editors for a two-part series of *Educational Technology & Society 5*(1 and 2). (Available at

http://ifets.ieee.org/periodical/vol_2_2002/v_1_2002.html and http://ifets.ieee.org/periodical/vol_2_2002/v_2_2002.html)

Spector, J. M., Klein, J., de la Teja, I., Sims, R., & Grabowski, B. (2002). Competencies for classroom and online teaching: Development and validation. *Proceedings of the World Conference on E-Learning in Corporate, Government, Healthcare, & Higher Education* **(**pp. 2747-2748). Available at http://dl.aace.org/9992

Spector, J. M. (2002). *Review of Designing Effective Instruction (4th ed.)*. Review requested by and submitted directly to the publisher, John Wiley & Sons, Inc.

Bond-Hu, D., & Spector, J. M. (2002). A review of *Designing Effective Instruction. Educational Technology Research & Development, 50*(2), 79-83.

Spector, J. M., & Edmonds, G. S. (2002, September). Knowledge management in instructional design. *ERIC Digest EDO-IR-2002-02*. Syracuse, NY: ERIC Information Technology Clearinghouse. Available at http://www.ericit.org/digests/EDO-IR-2002-02.shtml

Koszalka, T. A., & Spector, J. M. (2003). A review of two distance learning books. *Evaluation and Program Planning, 26* (2), 225-226.

Spector, J. M. (2003). A review of two papers by Eva Baker for the National Forum of Educational Policy: *Improving Accountability Models by Using Technology-Enabled Knowledge Systems (TEKS)* and *Technology in Schools: Approaching Real Life*.

Spector, J. M. (2003). A review of 'Communications and Networking in Education' and 'Information and Communication Technologies in Education'. *Quarterly Review of Distance Education, 4*(3), 351-355.

Spector, J. M. (2004). Advances in cognition, learning and performance in the digital age. In Kinshuk, D. G. Sampson, & P. Isaías, *Cognition and exploratory learning in the digital age* (CELDA 2004) (pp. xxi – xxxvi). Lisbon: IADIS Press.

Spector, J. M., Dennen, V. P., & Koszalka, T. A. (2005). Individual and collaborative construction of causal concept maps: An online technique for learning and assessment. *Proceedings of the International Conference for Methods and Technologies for Learning*. Palermo: Institute for Educational Technology, Italian Research Council.

Spector, J. M., Dennen, V. P., & Koszalka, T. A. (2005). Causal maps, mental models and assessing acquisition of expertise. *Proceedings of the 11th Annual Human Computer Interaction International Conference*, Las Vegas, Nevada, July, 2005.

Spector, J. M. (2005). Instructional design mini-manual (5th ed.). White paper used in seminars and workshops on technology integration in learning and instruction.

Spector, J. M., Klein, J. D., Reiser, R. A., Sims, R. C., Grabowski, B. L., de la Teja, I. (2006, April). Competencies and standards for instructional design and educational technology. Invited discussion paper for ITFORUM, April 17-21, 2006. [Available online at http://it.coe.uga.edu/itforum/.]

Spector, J. M. (2006). From learning to instruction: Adventures and advances in instructional design. *Proceedings: EARLI Instructional Design Special Interest Group*, Leuven, Belgium, June, 2006.

Spector, J. M., Klein, J. D., Reiser, R. A., Sims, R. C., Grabowski, B. L., de la Teja, I. (2006, July). Competencies and standards for instructional design and educational technology. Invited paper for ASTD-San Antonio Newsletter based on the ITFORUM discussion paper, July, 2006.

Kinshuk, Sampson, D. G., Spector, J. M., & Isaías, P. (Eds.) (2006). *Cognition and exploratory learning in the digital age – CELDA 2006: Proceedings*. Lisbon, Portugal: IADIS Press.

Dennen, V. P., & Spector, J. M. (2007). Preparing educational technology leaders: Reflections on the past, present and future. *Educational Technology, 47*(4), 5-12.

Spector, J. M. (2008). A review of "Concept Mapping for Planning and Evaluation." *Evaluation and Program Planning, 31*(2), 217-218.

Spector, J. M., Hartley, R., Koper, R., Kinshuk, & Elsayed, A. (2008). A competency approach: Implications for e-learning and e-assessment. In Diaz, P., Kinshuk, I. Aedo, & Mora, E. (Eds.), *Proceedings of the 8th IEEE International Conference on Advanced Learning Technologies* (pp. 1013-1014). Los Alamitos, CA: IEEE

Computer Society.

Spector, J. M. (2009-2010). President's Column. *TechTrends 53-54*.

Bishop, M. J., Schuch, D., Spector, J. M. & Tracey, M. W. (2009). Providing novice instructional designers real-world experiences: The Pacificorp design and development competition. *TechTrends, 49*(2), 20-21.

Spector, J. M., Knezek, G., Searson, M., Lockee, B., & Bull, G. (2010). AECT-SITE Collaboration Through the National Technology Leadership Coalition. *Contemporary Issues in Technology and Teacher Education*, *10*(4), 360-365.

Spector, J. M. Knezek, G., Searson, M., Lockee, B., Bull, G., & Brown, A. (2011). AECT-SITE collaboration through the National Technology Leadership Coalition (Special invited editorial). *TechTrends, 55*(5), 16-19.

Spector, J. M. (2012). Foreword. In S. Graf, F. Lin, Kinshuk, & R. McGreal, *Intelligent and adaptive learning systems: Technology enhanced support for learners and teachers* (pp, xvii-xix). Hershey, PA: IGA Global.

Spector, J. M., Ifenthaler, D., Knezek, G., Tyler-Wood, T., & Kim, C. (2013). Methods and technologies to promote information- centered knowledge construction. *iConference 2013 Proceedings* (pp. 1031-1032). doi:10.9776/13268

Christakis, A., Hammond, D., Jackson, M., Laszlo, A., Mitroff, I., Snowden, D., Troncale, L., Carr-Chellman. A., Spector, J. M., & Wilson, B. (2013). Systems science. *Educational Technology, 53*(5), 64-78.

Spector, J. M. (2014). A critical examinations of MOOCS with remarks about mini-MOOCs. Video recording aat the University of Hong, Kong, June 13, 2014.

Spector, J. M. et al. (2015). Assessment as, for and of learning. In K-W. Lai (Ed.), Technology advanced quality learning for all: EDUsummIT 2015 Summary Report (pp. 33-38). Bentley, Western Australia: Curtin University. Retrieved from http://www.curtin.edu.au/edusummit/event.cfm

Natividad, G., Spector, J. M., & Evangelopoulos, N. (2016). An analysis of educational technology publications from 1995 to 2014. Proceedings of the annual meeting of the International Conference on Advanced Learning Technologies (ICALT). Austin, TX: ICALT.

Huang, R. H., Gao, Y., Liu, D. J., Kinshuk, Spector, J. M., Ooi, P. S., Chen, X., Wei, X. F., & Yang, L. (2018). 2018 Technology outlook for Chinese vocational education: A horizon project report. Beijing: Smart Learning Institute of Beijing Normal University.

Lin, L., & Spector, J. M. (2018). A report on the AECT sponsored symposium entitled "The Human-Technology Frontier: Understanding the Learning of Now to Prepare for the Work of the Future. *TechTrends*, *June 2018*.

Spector, J. J. (2021). Remarks on digital language learning: Insights from behavior, cognition and the brain. *Bilingualism: Language and Cognition*, 1–2. https://doi.org/10.1017/S1366728921000560

GRADUATE/POST-GRADUATE SUPERVISION/COMMITTEES

Holmberg, Lena. (1996, Feb). *Design of learning environments for IT-users*. External examiner at dissertation defense at Göteborg University, SWEDEN.

Kang, Benny. (1997, Feb). *Upstream processes in courseware engineering*. External examiner at dissertation defense at Lancaster University, UK.

Andersen, Jennifer. (1998, Dec). *Water allocation in arid and semi-arid region*s. Internal examiner at thesis defense at the University of Bergen, NORWAY.

Ullah, Qudrat. (1999, May). *Dynamics of electricity supply, resources, and pollution*. Internal examiner at thesis defense at the University of Bergen, NORWAY.

Xiaqian, Ning (1999, May). Impacts of budget contingency management on project performance. Internal examiner at thesis defense at the University of Bergen, NORWAY.

Akıncı, Z. Beril (1999, September). *Corporate Culture and Organizational Communication*. Visiting EIST PhD Researcher from Ege University, Izmir, Turkey. External examiner at dissertation defense at Ege University, Sep 1999.

Makochieng, Mark (1999, October). *Effects of information technology on the learning process: Formative evaluation of a technology based curriculum for postgraduate orthodontics education*. Supervisor, *Hovedfag* thesis at the Department of Information Science, University of Bergen, Oct 1999.

Christensen, Dean. (1999-2000). Fulbright Research Fellow at EIST, University of Bergen, NORWAY.

Carter, Willajoya (2000, April). *"Set Free" without stereotypes and prejudices: Multiple perspectives on facilitating elementary inclusion for graduates of an inclusive preschool*. External reader, doctoral examination at the School of Education, Syracuse University, Syracuse, NY, April 2000.

Soojung, Jang (2000, June). *Psycho-social criteria in student evaluation of college teachers*. Dissertation committee, School of Education, Syracuse University, Syracuse, NY, June 2000.

Chalmers, Patricia (2000, September). *A study of the role of "continuous organizers" in retention of computer enhanced training material*. Dissertation committee. School of Education, University of Minnesota, Minneapolis, MN.

Lewis, Barbara (2001, May). *Learning effectiveness: Efficacy of quizzes vs. discussions in on-learning.*

Dissertation committee, School of Education, Syracuse University, Syracuse, NY.

Abdul Karim, Nor Shahriza (2001, June). *Discretionary Behavior of Information and Communication Technology Supported ad hoc Task Groups*. External reader, School of Information Studies, Syracuse University.

Euto, Linda R. (2002, April). *We would have the answers if only we knew the questions: An exploration of computer questioning behavior among first- and second- grade students*. Dissertation committee. School of Education, Syracuse University, Syracuse, NY.

Qudrat-Ullah, Hassan (2002, June). *Decision making and learning in complex dynamic environments*. External examiner. National University of Singapore, Department of Decision Sciences.

Jabot, Michael. (2002, June). *Teacher pedagogical content knowledge as a predictor of student learning gains in direct current circuits*. External reader, doctoral dissertation, Syracuse University, Syracuse, NY, June 2002.

Hallagan, Jean Elizabeth (2003, April). *Teachers' models of student responses to middle school algebraic tasks*. External reader, School of Education, Syracuse University.

Sawicka, Agata (2004, June). *Dynamics of security compliance: Case of IT-based work environment*. External opponent, Department of Information Science and Media Studies, University of Bergen, Norway.

Ganesan, Radha (2004, July). *Perceptions and practices of expert teachers in technology-based distance and distributed learning environments*. Advisor, Dissertation supervisor, School of Education, Syracuse University.

Solberg, Tom (2004, October). *PROFFT- A usability study and evaluation of the user experience.* External examiner, Department of Information and Media Studies, University of Bergen, Norway.

Revercomb, Pamela. L (2005). *Senior adult Internet information literacy*: *Observations of information seeking skills in the senior adult Internet course.* Dissertation committee. School of Information Studies, Syracuse University.

Storrings, Deborah. A. (2005). *Attrition in distance education: A meta-analysis*. Advisor, Dissertation committee. School of Education, Syracuse University.

Lim, Jung (2006). *Part- and whole-task training approaches of the 4C/ID-Model for enhanced learning of complex cognitive skills*. Dissertation committee. Educational Psychology & Learning Systems, Florida State University.

Gogus, Aytac Simsek (2006). *Individual and situation factors that influence teachers' perspectives and perceptions about the usefulness of the graphing calculator on the New York State Math B Regents exam*. Dissertation supervisor. School of Education, Syracuse University.

Eseryel, Deniz (2006). *Expert conceptualizations of the domain of instructional design: An investigative study on assessing complex problem-solving outcome*s. Advisor, Dissertation committee. School of Education, Syracuse University.

Kim, Soyoung (2006). *Juxtaposition of semiotic mediation with social mediation: The effect of text types and social interaction on moral judgment*. Dissertation committee. Educational Psychology & Learning Systems, Florida State University.

Milrad, Marcelo (2006). *Designing interactive learning environments to support learner's understanding in complex domains*. Dissertation supervisor. School of Social Sciences, University of Bergen, Norway.

Vibeke Vold (2007). Age related developmental aspects in technological interface design. External examiner, Department of information science and media studies, University of Bergen, Norway.

Maxim Mozgovoy (2007). Enhancing computer-aided plagiarism detection. Dissertation Committee/Reviewer. University of Joensuu, Finland.

Magnhild Viste (2008). Visualization of complex systems. Dissertation committee – lead external examiner. Faculty of Social Sciences, University of Bergen, Norway.

Hyewon Kim (2008). *An investigation of the effects of model-centered instruction in individual and collaborative contexts: The case of acquiring instructional design expertise*. Dissertation supervisor. Educational Psychology & Learning Systems, Florida State University.

Roberto Perez (2008). *Animated pedagogical agents as Spanish language instructors: The effect of accent, appearance, and type of activity on student performance, motivation and perception of agent*. Dissertation Committee. Educational Psychology & Learning Systems, Florida State University.

Kevin Harris (2008). *Deliberate practice, mental representations and skilled performance*. Dissertation Committee. Department of Psychology, Florida State University.

Lingguo Bu (2008). *Primes in context using technology: Toward a didactical model for the teaching and learning of prime numbers in middle school mathematics*. Dissertation Committee, College of Education, Florida State University.

Linda Smith (2008). Graph and property set analysis: A methodology for comparing mental model representations. Dissertation supervisor, Educational Psychology & Learning Systems, Florida State University.

Jeongmin Lee (2008). Effects of model-centered instruction and levels of learner expertise on ill-structured problem solving. Dissertation supervisor, Educational Psychology & Learning Systems, Florida State University.

Jonathan McKeown (2008). *Using annotated concept map assessments as predictors of performance and understanding of complex problems for teacher technology integration*. Dissertation supervisor, Educational Psychology & Learning Systems, Florida State University.

Annya Hernandez-Gomez (2009). *Depressive symptoms and caregiver burden among older adult Hispanic caregivers: The contributing role of acculturation*. Dissertation committee. Psychology Department, Florida State University.

Aaron Kim (2010). *The effects of initial mental model construction on mental model progression, performance, intrinsic motivation, and metacognition in learning financial literacy*. Dissertation supervisor, Educational Psychology & Learning Systems, Florida State University.

Min Kyu Kim (2011). *Assessment technologies for adaptive instruction: Diagnosis of stage-sequential learning progress in problem solving contexts*. Dissertation supervisor, Educational Psychology & Instructional Technology, University of Georgia.

Chia-Jung (Lily) Lee (2013). The implementation study of a technological pedagogical content knowledge based instructional design model. Dissertation co-supervisor, Educational Psychology & Instructional Technology, University of Georgia.

Hyun Song Kim (2014). Designing and implementing an online program for college science problem solving. Dissertation co-supervisor, Educational Psychology & Instructional Technology, University of Georgia.

So Mi Kim (2014). The effects of goal instructions and source representation scaffolds on college students' argumentation. Dissertation committee member, Learning, Design and Technology, University of Georgia.

Beth Riley (2014). Effects of board training on the relationship between board members and CEOs. Dissertation committee member, College of Education, University of North Texas.

Bruce Gabbitas (2015). Constructive modeling: Exploring patterns of student model construction in the classroom. Dissertation committee member. College of Education, University of Georgia.

Gloria Natividad (2016). An analysis of educational technology publications: Who, what and where in the last 20 years. Dissertation supervisor, College of Information, Department of Learning Technologies, University of North Texas.

Princess Cullum (2016). Physician leadership and self-efficacy: A case study using grounded theory. Dissertation supervisor, University of North Texas, College of Information, Department of Learning Technologies, University of North Texas.

Godwin Okeke (2016). The impact of digital games on high school students' academic achievement in mathematics education: A meta-analytic investigation. Dissertation co-supervisor, University of North Texas, College of Information, Department of Learning Technologies, University of North Texas.

Z. Bashet (2016). The effectiveness of question creation activities on student learning. Dissertation supervisor. College of Information, Department of Learning Technologies, University of North Texas.

Kashieka Popkin (2016). Higher education students and computer based instructional systems (CBI): Students' perspectives on the influence of CBI for identify students' learning outcomes. Committee member. College of Information, Department of Learning Technologies, University of North Texas.

Bei Yuan (2016). Improving students' diagnostic problem solving performance with expert support in a computer-based learning environment. External examiner of dissertation at the University of Hong Kong.

Stephanie Barbee (2017). An Integrative Approach to Technology-Enhanced Physical Education. Committee member. College of Information, Department of Learning Technologies, University of North Texas.

Gwen Morel (2017). Educational Technology: A Longitudinal Comparison of Ten Academic Journals and the NMC Horizon Reports. Committee member. College of Information, Department of Learning Technologies, University of North Texas.

Heather Leahey (2017). Examining Trends in Online Learning using Text Mining: Reviewing 20 Years of Research Literature (1997-2016). Committee member. College of Information, Department of Learning Technologies, University of North Texas.

Shanshan Ma (2021). Exploring critical thinking support for K-12 education in the Internet age. Dissertation supervisor. College of Information, Department of Learning Technologies, University of North Texas.

Michael Schellen (2023). Examining the Relationship of Critical Thinking Educational Efforts on Student Outcomes, Committee member, University of North Texas., Department of Learning Technologies, University of North Texas.

Vince Moore (in progress). Committee member. College of Information, Department of Learning Technologies, University of North Texas.

SPONSORED FACULTY/POSTDOCS

Christensen, Dean (1998). Visiting Fulbright Research Professor from Cyber Learning Corporation, St. Paul, Minnesota at the University of Bergen, Norway.

Lee, JaeMu (2004-2005). Visiting Korean Professor from Busan National University at Syracuse University and Florida State University, USA.

Kamat, Vasudha (2006). Visiting Fulbright Research Professor from SNDT Womens University, Mumbai, India at Florida State University-Learning Systems Institute, USA.

Kester, Liesbeth (2006). Visiting Fulbright Research Scholar from the Open University of the Netherlands at Florida State University-Learning Systems Institute, USA.

Hillen, Stefanie (2007). Visiting Postdoctoral Researcher from Agder University College, Grimstad, Norway at Florida State University-Learning Systems Institute, USA.

Jyoti Bawane (2008/2009). Visiting Fulbright Research Professor from the Indian Institute of Education, Center for Educational Studies, Pune, India.

Zheng-bao Wen (2012/2013), Hangzhou Normal University, Hangzhou, China.

Lynn Godkin (2013), Lamar University, Lamar, Texas.

Du Gyu Kim (2013/2014). Visiting research professor from Gwanil School/Hwashin Cyber University, Busan, South Korea.

Shi-hua (David) Cao (2013/2014), Hangzhou Normal University, Hangzhou, China.

Jeong-Im Choi (2014/2015), Catholic Kwandong University, Kangung, South Korea.

Guangtao Xu, (2014/2015), East China Normal University, Shanghai, China (Chinese Scholarship Council).

Yi, Zhang (2014/2105), Central China Normal University (Chinese Scholarship Council).

Ömer Uysel, (2014/2015), Anadalou University, Turkey (Turkish Scientific and Technological Research Council).

Xiaojuan (Janice) Xu (2015), East China Normal University, Shanghai, China (ECNU Visiting Student Scholar).

Yaunyuan (Iris) Feng (2015), East China Normal University, Shanghai, China (ECNU Visiting Student Scholar).

Dawit Tiruneh (2016). Katholieke Universigeit Leuven, Belgium. Visiting Doctoral Scholar.

Guolong (Dylan) Quan (2016-2017). East China Normal University, Shanghai, China (ECNU Visiting Student Scholar).

PeiYu Cheng (2016-2017). National Cheng Keung University, Taiwan. Visiting Student Scholar.

Pinghong Zhou (2016-2017). Central China Normal University. China Scholarship Visiting Doctoral Scholar.

Xue Wang. (2018). Tianjin Normal University. Visiting Doctoral Scholar.

Li Chen (2018-2019). Jiangxi Normal University. Visiting Doctoral Scholar.

Hongchao Peng (2018-2019). East China Normal University. Visiting Student Scholar.

Ying Yu (2019). Qufu Normal University. Visiting Doctoral Scholar.

PROFESSIONAL GOALS

Through a prominent leadership position at a major university, promote interdisciplinary scholarship to advance knowledge about effective approaches, methods and technologies to improve learning and instruction.

Develop and validate methodologies to assess progress of learning in and about complex domains.

Apply advanced technologies (e.g., artificial intelligence, interactive multimedia, object orientation, systems dynamics) to improve learning, instruction and performance in complex domains.

Continue research and development in the areas of: computer-mediated collaborative learning and instruction; instructional strategies for complex decision-making and problem-solving; intelligent performance support for instructional design; interactive learning environments; system dynamics based learning environments; distance and distributed learning.

Continue involvement with the academic community by: serving in leadership positions in the Association for Educational Communications and Technology and the American Educational Research Association, mentoring graduate students in educational psychology and instructional technology; serving as editor of *Educational Technology Research & Development* and on the editorial boards of leading journals in instructional science; promoting interdisciplinary research in learning and instruction.

Collaborate with other academic organizations, businesses, and various governmental agencies on common goals in the area of advanced learning environments (e.g., the International Board of Standards for Training, Performance and Instruction - *ibstpi*, the IEEE Learning Technology Technical Committee, the Learning Development Institute, and colleagues at such places as the University of Bergen, the University of Freiburg, Hong Kong University, the Open University of the Netherlands, and Sydney University).

PERSONAL INTERESTS

Backpacking, hiking, reading philosophy, learning new computer technologies, studying the history of science, skiing, playing tennis, writing inspirational stories

FAMILY

Daniel E. Spector (brother)	Retired Historian, Jacksonville, AL
Peggy Reach (sister)	Retired Government Administrator, Fairhope, AL
Minnie Skinner (sister)	Reading Teacher/Coach, Summerdale, AL
Randolph C. Bernard (son)	District Technology Coordinator/Administrator, Lafayette, LA
Julia M. Spector (daughter)	Master's degree from St. Johns University, New Mexico
Samuel D. Spector (son)	PhD, University of Otago, Dunedin, New Zealand
David E. Spector (son)	Master's degree from Denver Seminary, Denver, CO
Miriam P. Spector (daughter)	Graduate Student, Dallas Baptist University, Dallas, TX

REFERENCES

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TEACHING EXPERIENCES

Dr. Spector has taught courses in computer science, educational psychology, instructional science, and philosophy at both the undergraduate and graduate level for more than 25 years. He was an Associate Professor of Computer Science at Jacksonville State University from 1984 until 1991. While a Senior Scientist for Instructional Systems Research at Armstrong Laboratory from 1991-1996, he taught courses at the undergraduate level on a part-time basis in philosophy and was a regular contributor to graduate level courses on the psychology of adult learning and instructional design at the University of Minnesota and at Göteborg University. In becoming Program Director for Educational Information Science & Technology at the University of Bergen, Dr. Spector was externally reviewed and qualified as Full Professor and taught the learning environments course in the International Master's Degree program in System Dynamics as well as lecturing in graduate pedagogical information science courses at the Universities of Bergen and at Göteborg. In 1997, he began teaching the design of learning environments in the new Masters curriculum in Telematics at Agder University, Norway, where he also held a Professor II appointment. He has taught graduate courses in instructional design, development and evaluation at Syracuse University. He also has served as the external examiner on several European dissertation defenses and supervised a Norwegian dissertation study. Professor Spector established the International Center for Learning and Enhanced Performance Studies (ICLEPS) at the Learning Systems Institute, Florida State University and was the doctoral program coordinator of Learning Design at the University of Georgia. He is currently the Director for the doctoral program in Learning Technologies at the University of North Texas.

BIOGRAPHICAL SKETCH

Professor J. Michael Spector is Professor and Former Chair of Learning Technologies at the University of North Texas. Previously Professor J. Michael Spector was a Research Scientist at the Learning and Performance Support Laboratory, Professor in the Educational Psychology and Instructional Technology Department, and Doctoral Program Coordinator for the Learning, Design, and Technology Program at the University of Georgia. Formerly, he was Associate Director of the Learning Systems Institute, Professor of Instructional Systems, and Principal Investigator for the International Center for Learning, Education and Performance Systems at Florida State University (2004 – 2008). He is a distinguished graduate of the United States Air Force Academy and earned a Ph.D. in Philosophy from The University of Texas at Austin. His recent research is in the areas of intelligent support for instructional design, system dynamics based learning environments, assessing learning in complex domains, distance learning, and technology integration in education. Dr. Spector served on the International Board of Standards for Training, Performance and Instruction (*ibstpi*) as Executive Vice President; he is on the Executive Committee of the IEEE Technical Committee for Learning Technology, and he is a Past-President of the Association for Educational and Communications Technology (AECT). He was the editor of the Development Section of *ETR&D* for 15 years and is now editor of the Featured Papers Section; he also serves on numerous other editorial boards. He was lead editor on the third and fourth editions of the *Handbook of Research on Educational Communications and Technology,* and he was lead editor of the *Sage Encyclopedia of Educational Technology*. He has more than 150 journal articles, book chapters ad books to his credit. He has been awards numerous grants over the years from NSF, DHS, The US DoD, USAID, the Mellon Foundation and others, and he currently has two pending grant proposals with NSF.

Professional Goals

It is my goal to continue to serve the professional community as an editor of ETR&D and as a leader in AECT. In those positions, I wish to increase the level of scholarship and pursue further internationalization. With regard to research, I intend to pursue methods and technologies to assess learning in complex domains and the development of critical thinking skills of young children. I am interested in a leadership position in the department as I believe I have a great deal to offer in building stronger graduate programs and strengthening educational research among doctoral students. My core competencies include assessing learning and performance in complex task domains, automated support for instructional design, epistemology in learning and instruction, open and distance learning, system dynamics in education and training, critical thinking skills in young children, and technology integration in learning, instruction and performance systems.