

Shirley Shmerling

Isenberg School of Management - UMass Amherst
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Education

- Ph.D. Management Science, 1994**
School of Management, University of Massachusetts Amherst, Amherst, MA.
Dissertation: “*Synthesis of Lagrangean Relaxation and Polyhedral Theory for the Solution of Routing Problems*”.
- M.Sc. Operations Research and Systems Analysis, 1987**
Industrial Engineering and Management, Technion – Israel Institute of Technology, Haifa, Israel.
Thesis: “*Query processing Strategy in a Distributed Database*”.
- B.Sc. Information Systems Engineering, Cum Laude, 1985.**
Computer Science, Technion – Israel Institute of Technology, Haifa, Israel.

Academic Experience

- University of Massachusetts Amherst** Sept. 2004 – Present
Isenberg School of Management
Senior Lecturer II
(Promoted from Lecturer to Senior Lecturer on Sept 2010; Promoted to Senior Lecturer II effective Sept 2017)
- Mount Holyoke College**..... July 2004 - July 2008
Summer SEARCH program
Instructor
- Mount Holyoke College**.....Sept. 2002 – May 2003
Visiting Assistant Professor

Academic Interests

Management and Governance of Information Systems,
Strategic Management of Innovation and Technology,
Business Analytics and Knowledge Management, Artificial Intelligence,
Virtual Teams, Project Management,
Electronic Healthcare Systems, Process Improvement, Quality Management,
Online Education and Technology Supported Learning.

Publications

Books

Shifflet M., Martinez C., Oppenlander J. and Shmerling S. 2020. *Improving Health Care Quality: Case Studies with JMP*. Wiley.

Chapters in Books

Shmerling, S. & Peters, L.M.L. 2012. Virtual Teaming in Online Education: Does It Work? In Wang, S. and Harrison, Y. (Eds.), *Cases on Formal, Non-Formal, and Informal Online Learning: Opportunities and Practices*. IGI Global Publishing. Pgs. 1-18.

Refereed Publications

Lesley W. & Shmerling S. 2015. Opportunities and Challenges of Data Mining the Electronic Health Record. *Physician Leadership Journal*, July-August, 2(4):40-45.

Barone J. & Shmerling S. 2013. Strategically Using Information Technology Resources in Healthcare. *Physician Executive Journal of Medical Management*, 39(1), 56-63

Peters, L., Shmerling, S., & Karren, R. 2011. Constructivist Pedagogy in Asynchronous Online Education: Examining Proactive Behavior and the Impact on Student Engagement Levels. *International Journal on E-Learning*, 10(3): 311-330.

Agha, A.I. and Shmerling, S. 1996. Incorporating Facet-Inducing Inequalities into Graphical-Construct-Based Lagrangean Relaxation Methodologies. *Operations Research Letters*, Vol 18, 177-184.

Papers Presented in Refereed Conferences:

Peters, L. & Shmerling, S. 2013. Online Simulations: Identifying Factors that Impact Performance. In *Proceeding of Eastern Academy of Management, 50th Annual Meeting*. Baltimore, May 2013. Pgs. 1676-1695

Sinha, V.K., Peters, L., Shmerling, S. and Ahluwalia, P.K. "Virtual Teams in the 'Real World': Expanding the Peters-Manz Collaboration Model to Complex Geographically Distributed Teams". *International Conference on Practice and Research in Management*. Dayalbagh, Agra, India. February, 2011.

Peters, L. & Shmerling, S. 2010. E-Teaching: Building Successful Virtual Team in Higher Education Courses. In *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education*. Chesapeake, VA: AACE. Pgs. 1153-1160

Other Publication

Oppenlander, J., Shifflet, M., Shmerling, S., Stephens, E. and Stephens, M. 2018. Improving Patient Satisfaction Endocrinology Group Patient Feedback. JMP online Case Library.
https://www.jmp.com/en_gb/academic/case-study-library.html#patient

Shmerling, S. and Moyano Camihort, K. 2011. Models for Effective Collaborative Learning: Student-to-Student Mentoring. NEFDC Exchange, 22(2): 11-15.

Technical Reports

“Tracking the Orbit of Satellite Radio”; Co-authored with Jeffery Kaplan.
University of Massachusetts Amherst, Amherst, MA. October 2009.
The case study provides understanding of managing a technology-driven business shaped by rapid innovation.

Teaching Note for the case: *“Tracking the Orbit of Satellite Radio”*; Co-authored with Jeffery Kaplan. University of Massachusetts Amherst, Amherst, MA. October 2009.

“A Graphical-Construct-Based Algorithm for Optimal Solutions to a Lagrangean Dual of the Hamiltonian Path Problem,” Working Paper, Department of Finance and Operations Management, University of Massachusetts Amherst, Amherst, MA (co-authored with Agha Iqbal Ali). September 1993.

Professional Presentations

Invited Presentations

“Can we fund this project? A discussion about IT project prioritization”
Co-presenter with Julie Massey, MD at the American College of Healthcare Trustees
Northeast Corridor Conference, Philadelphia, PA, May 10, 2016

“Effectiveness of online learning”
Presentation for Saudi women participating in the eLearning Pioneers program at Umass
Amherst. July 21, 2015

“Dynamics and Opportunities of e-Marketing”
Invited to present key note speech: at Phonak’s 3rd Annual Practice Development
Conference, Half Moon Bay, CA, October 6, 2010

“Creating Value with On-Demand Knowledge”
SAP Helpdesk in the Cloud Webinar, CumulIQ.com April 30, 2009.
CumulIQ.com is a pioneer of the Knowledge as a Servicesm model and an on-demand
marketplace for SAP solutions and training.

“Tools and strategies for teaching online”
Chinese delegation meeting, Shrewsbury, MA, April 29, 2008

“Emerging Technologies for Interactive Teaching and Learning”

Live Online Learning Symposium, Umass Online and Umass president office,
Shrewsbury, MA, November 29, 2007

Other presentations:

“Four Women, One Book: A Distance Collaboration”.

Oppenlander J., Shifflet M., Shmerling S. and Martinez C.

Women in Statistics and Data Science, Online, Sept 30 - Oct. 2, 2020

“Same Problem, Different Audience - Using JMP Dashboards to Identify and Communicate Opportunities for Reducing Length of Stay”.

Stephens E., Shifflet M., Cohen A., Shmerling S., Madden S. and Oppenlander J.

Discover Summit - Exploring Data Inspiring Innovation, St. Louis, Missouri. Oct 20, 2017.

“Perceptions of Risk and Collaboration within Entrepreneurship Circles: How do educators prepare students for the real challenges of running a business?”

Peters, L. Shmerling, S. & Dobartz, C. Eastern Academy of Management, 53rd Annual Meeting. New Haven, May 6, 2016

Women’s Leadership Symposium for eLearning and Academic Technologies.

Invited panelist. The Open Education Consortium. Cambridge, Massachusetts. July 29, 2015.

“Developing ‘Best Practices’ in Entrepreneurship Education”.

Peters, L. Shmerling, S. & Dobartz, C. Eastern Academy of Management, 51st Annual Meeting. Philadelphia, May 7, 2014

“Teams in Higher Education: The New Face of Social Promotion”.

Peters, L. & Shmerling, S. Eastern Academy of Management, 49th Annual Meeting. Philadelphia, May 12, 2012

“Student-Student Mentoring: Models for Effective Collaborative Learning – Teaching with Wikis”

Shirley Shmerling and Karin Moyano Camihort. NEFDC conference, Worcester, MA. May 20, 2011

“Learning with wikis”

OIT meeting Amherst, MA, November 30, 2010

“Using IDEAS to facilitate state of the art research applying Data Envelopment Analysis (DEA) methodology”

Georgia Productivity Workshop, University of Georgia, Athens, GA, October, 1998.

“Applying Dual Ascent Techniques in Networks/ Graphs”

A.I. Ali and S. Shmerling. ORSA/TIMS joint national meeting, San Francisco, CA, November 1992.

“Dual Ascent Direction for Lagrangean Duals of Routing Problems”

A.I. Ali and S. Shmerling. ORSA/TIMS joint national meeting, Anaheim, CA, November 1991.

“Optimization and Reoptimization of Spanning trees”

A.I. Ali and S. Shmerling. ORSA/TIMS joint national meeting, Philadelphia, PA, October 1990.

“Algorithmic Constructs for Routing problems”

A.I. Ali and S. Shmerling. ORSA/TIMS joint national meeting, New York, NY, October 1989

Courses Taught

Strategic Information Management

Isenberg School of Management, Umass Amherst (September 2004-present)

The course provides students with a strategic view of information technology in organizations and how it affects the way businesses organize work and compete. Curriculum includes IT governance structures and processes, creating value with IT, mitigating risks associated with IT, understanding of the partnership between IT, business and third parties service providers, emerging technologies and how to manage the challenges associated with conceiving, justifying, deploying and maintaining IT-based initiatives in organizations. Approximately 300-400 graduate students enrolled each year. Course taught in the following formats:

- **Online MBA.**

Curriculum includes case discussions, multi-media presentations and use of various web-based technologies to foster communication and collaboration in online classroom as well as a project that applies course material to students' work.

- **Hybrid MBA classes**

Course taught in satellite campuses: Boston (ongoing), Shrewsbury/Worcester (until 2023), Holyoke/Springfield (until 2020) and Pittsfield (until 2010). Curriculum includes case discussions, experimentations with new technologies and projects that apply course material to students' work.

- **Full Time MBA.**

Face to face class (2004-2010, 2018-2020, 2025): approximately 35-42 students per year.

Curriculum includes case discussions, simulations and experimentations with new technologies as well as meetings with guest speakers and working with local organizations.

- **MSA program**

- Face to face class (2005-2009): approximately 55-60 students per year.

Curriculum included case discussions and Excel based analysis, experimentation with new technologies and meeting with one or two guest speakers including a collaborative session with IT audit managers at PWC Boston.

- Online (2010): approximately 35 students per year.

Curriculum included multi-media presentations and use of various web based technologies to foster communication and collaboration in online classroom as well as serious-games and simulations.

AI in Business

Isenberg School of Management, Umass Amherst (Spring 2024 -present)

Undergraduate level course. The course is designed for business major students aspiring to develop a deeper understanding of artificial intelligence and its use in business applications. The course provides an introductory overview of different data analysis tools and machine learning techniques commonly used in artificial intelligence. Curriculum focuses on case studies and applications that demonstrate how artificial intelligence can augment current business operations as well as hands-on work with Alteryx and python code using google colab.

Quality Management

Isenberg School of Management, Umass Amherst– Fall 2006, Fall 2014-present

Undergraduate level course. Curriculum includes fundamental statistical concepts, Statistical Process Control (SPC), acceptance sampling, industrial experimentation and reliability as well as methods for quality improvement (Six Sigma). Course includes experiential learning activities as well as extensive lab work, problem solving using Minitab, JMP and Excel and engagement with quality professionals.

Manufacturing and Service Operations Methods

Isenberg School of Management, Umass Amherst– Spring 2015-present

Undergraduate level course. Curriculum includes methods in modeling and analyzing business and economic problems with emphasis on resource allocation, logistics planning and service management. Course includes the process of abstracting problems and formulating valid models, solving models using quantitative technique, interpreting results and using ‘what if’ analysis to make recommendations to improve business operations and communicate those recommendations to decision makers.

Quality Analytics

Isenberg School of Management, Umass Amherst (Winter 2016, Winter 2018, Winter 2020, Winter 2022, Winter 2024)

Course taught online and offered as a 1-credit and a 2-credit course. Curriculum included development of skills to obtain visibility into operational processes, identify quality issues before they become serious problems, evaluate cost of poor quality and to gain insights about how to drive continuous quality improvements and increase profitability. Course included multi-media and data analysis using JMP by SAS.

Strategic Management of Technological Innovation

Isenberg School of Management, Umass Amherst (Winter 2014, Winter 2015, Winter 2017, Winter 2019, Winter 2021, Winter 2023, Winter 2025)

Course taught online and offered as a 1-credit and a 2-credit course. Curriculum included foundations of technological innovations, formulation of innovation strategies, forms of

collaboration and the tradeoffs associated with each of them and, diffusion of innovation and gaining buy-in within the organization and among customers. Course included multi-media, simulation game and engagement with alums who are involved with technological innovations.

Strategic Business Decisions through gaming simulation

Isenberg School of Management, Umass Amherst (June 2015, June 2016, June 2017)

Course provided students understanding and hands-on experience with transforming business data into useful information that supports business decision-making. Course included online course-work and a 2-day in-person workshop with the SAP ERPSim simulation.

Exploring Data Analytics for Accounting Professionals

Isenberg School of Management, Umass Amherst (Spring 2017-Spring 2019)

Course taught in two formats: fully online and hybrid of online and face-to-face meetings. Approximately 40-60 graduate students each semester. Course addresses the needs of accounting firms to prepare students for the fast-changing, global market place, sharpening their analytics mindset. It provides an understanding of analytics and information technology fundamentals such as business process management, enterprise resource planning and information security. Through hands-on work with applications such as Excel, Tableau and SAP, students learn to extract and transform relevant data from an enterprise system, assess security-related issues, apply data analytic techniques, interpret results and make data-driven decisions

Information Technology for Accountants

Isenberg School of Management, Umass Amherst (Fall 2011-Fall 2016)

Course taught online. Approximately 25 -45 graduate students each semester. Curriculum provides an understanding of information technology fundamentals such as business process management, enterprise resource planning, data management, information security, continuity planning, disaster recovery, risk management, COBIT and XBRL and other relevant topics. Since Fall 2014 students have been also engaged in hands-on work with SAP including the ERPSim simulation.

Strategic Management of Innovation and Technology

Isenberg School of Management, Umass Amherst (Fall 2007, Fall 2008 and Fall 2009)

30-40 PMBA students each year. Course taught online. Curriculum included formulation of innovation strategies, forms of collaboration and the tradeoffs associated with each of them and, diffusion of innovation and gaining buy-in within the organization and among customers. Course included case discussions, collaborative study and development of innovation strategies as well as live online sessions with guests from companies such as IBM and EMC.

Wireless Technologies: The application and evaluation of advanced technologies

Isenberg School of Management – Winter 2006.

This 1-credit PMBA course provided an introduction to current and developing wireless technologies. Topics include mobile commerce, location-based tools, evaluation of the cost benefit of deploying wireless technologies and, development of new wireless applications.

Using technology for mathematical modeling and experimentation

Mount Holyoke College July 2004, July 2005, July 2006, July 2007, July 2008

Developed and delivered a technology course at the Search Summer Program; a program that enables young women to experience a research environment in Mathematics. The curriculum focused on the use of computing tools for modeling and solving complex mathematical problems as well as business and scientific applications.

Calculus I

Mount Holyoke College - September 2002 – May 2003

Curriculum included functions and models, limits, derivatives, differentiation rules, integrals, the fundamental theorem and, applications of differentiation, and integrals in the natural and social sciences.

Mathematical Experimentation

Mount Holyoke College – January 2003– May 2003

Curriculum included a series of laboratory projects using the computer as an experimental tool. Projects directed toward discovery of properties and patterns in mathematical structures across a range of different mathematical areas: iteration of maps, number theory, Fourier and Taylor series, probability and, graph coloring.

In addition, coached and advised students who presented papers at the 2003 Hudson River undergraduate mathematical conference.

Independent studies

Fiona, Tanikonda, OIM, Spring 2025

Reducing Emergency Rooms Wait Times with Queue Management

Anna Wagner, OIM, Fall 2024

Quality Management in Healthcare

Andrew DiPilla, MSA, Spring 2019

Data Analytics of cellular operations at a Telecom company

Erik Vinh, MBA, Spring 2019

Digital Marketing

Maryanne Bombaugh, MBA, Fall 2016

“Use of Practice Pattern Variation Analysis in Health Care: Opportunities to Improve Quality and Resource Use”

Marianna Mkrtchyan, MBA, Summer 2016

“Data Science and the Analytics Edge”

Stacey Reis, MBA, Fall 2015

“Usage of analytics and data mining for recruiting and hiring processes”

Jordan Briseno, Libby Rosenberry, Jason Girouard, BBA - OIM Honors, Fall 2015

“University Health Services: Minimizing Cost While Meeting Demand”

Olivia Newell, BBA - OIM Honors, Spring 2015

“Application of waiting lines and Quality Management at Umass dining”

Walter Lesley, MBA, Summer 2014

“Mining Electronic Medical Records: Risks & Opportunities”

Ezra Kaufman, BBA - Accounting, Spring 2014

“Business Information Systems”

Christopher Jasinski, MBA, Fall 2010

“The Veterans Health Information System and Technology Architecture (VistA) Viewed from a Sociotechnical System Perspective”

Tina Sebastian, MBA, Spring 2010

“Technology in Quantitative Finance”

Gaurav Gautam, MBA, Spring 2010

“Business Intelligence – tools and applications”

Michelle Green, MBA. Spring 2009

“How Mobile Technology is changing the business environment: evaluation, implementation and policy”

Marybeth Kimball, undergraduate (UWW). Spring 2008

“The new face of Online education: a great alternative to brick and mortar”

Apoorva Bajaj, MBA. Fall 2007

“Innovation in Technology Businesses in Western Massachusetts”

Robert McHugh, Undergraduate (OM major). Spring 2006

“Information Systems Management used for the operations of organizations (manufacturing and service)”

Seamus Gahan, MBA. Fall 2005

“Technology and Innovation in Small Businesses”

Faculty Development and Training

EYARC Summer Webinar series #1. Online. June 18, 2025

DataCamp AI Business Fundamentals track. June 11, 2025

Human Research, Social Behavior Research Investigator Basic course (IRB),
CITI program, May 31, 2025

IT teaching workshop. Online. University of Delaware, May 16, 2025

Alteryx SparkED Winter School. Online Workshop for Educators, Jan 8-10, 2024

Keeping our organizations cyber-secure in the COVID-19 environment. How secure are we?,
MIT Sloan CIO Digital Learning Series Webinar, July 15, 2020

Leading a Post-Pandemic Enterprise,

MIT Sloan CIO Digital Learning Series Webinar, June 10, 2020

Introduction to Python, Online ISSR summer methodology workshops, Jun 18-19, 2020

Introduction to R, Online ISSR summer methodology workshops, Jun 15-16, 2020

Accounting IS Big Data Conference (San Francisco, September 2016)

JMP workshops:

- Data Mining and Predictive Modeling (webinar. July 2016)
- Building Better Models: Getting the Most from Data Mining (San Diego, Feb 2016)

SAP Workshops:

- Business Intelligence and Analytics (Chico, CA, June 2014)
- ERP Simulation Game – instructor level 2 (Montreal, June 2014)
- ERP Simulation Game – instructor level 1 (Atlanta GA, March 2014)

IBM faculty workshop: predictive analytics using SPSS Modeler (Littleton, MA, Oct. 2013)

Awards and Honors

2025	Nominated for UMass Distinguished Teaching Award 2024-2025
2024	Umass Instructional Innovation Fellowship 2024-2025
2024	Collaborative SoTL Scholar, CTL 2024-2026
2024	Nominated for the College Outstanding Teaching Award 2023-2024
2024	Nominated for UMass Distinguished Teaching Award 2023-2024
2022	Nominated for Isenberg Teaching graduate courses with Digital Technology Award
2021	Isenberg Teaching Fellow 2021-2022
2021	UMass ADVANCE Faculty Peer Mentoring Award
2021	Nominated for UMass Distinguished Teaching Award 2020-2021
2021	Nominated for Isenberg Teaching undergraduate courses with Digital Technology Award
2021	Nominated for Isenberg Teaching graduate courses with Digital Technology Award
2020	Isenberg Teaching Fellow 2020-2021
2019	Nominated for UMass Distinguished Teaching Award 2019-2020
2017	Nominated for UMass Distinguished Teaching Award 2017-2018
2016	Nominated for UMass Distinguished Teaching Award 2016-2017
2016	Recipient of the College Outstanding Teaching Award 2015-2016
2016	Umass Innovation Fellow
2012	Nominated for UMass Distinguished Teaching Award 2012-2013

2010 Nominated for UMass Distinguished Teaching Award 2010-2011
 2008 Nominated for UMass Distinguished Teaching Award 2008-2009
 2007 Excellence in Teaching Award, The Graduate Business Association, Isenberg School of Management UMASS Amherst, MBA class of 2008
 2005 Nominated for UMass Distinguished Teaching Award 2005-2006
 2005 Excellence in Teaching Award, The Graduate Business Association, Isenberg School of Management UMASS Amherst, MBA class of 2006
 1992 Elected to membership in Beta Gamma Sigma.
 1991 ORSA Doctoral Colloquium participant.

Service

OIM department Student Awards and Scholarship Committee. Dec 2021-present

OIM Curriculum Committee. April 2018-present.

OIM department representative for Isenberg Scholarship Program. Nov 2016-Present

College Review Committee (CRC). April 2013-Present.

OIM department representative for Isenberg Curriculum Committee. Sep 2018-Aug 2021

Lead online session for Symposium of Innovation Fellows, Nov 1, 2016

Member of ad hoc committee that developed a framework for incorporating the MOOC model in the Isenberg online program. Fall 2012- Spring 2013.

Helped in migration from WebCT Vista platform to Blackboard Learn platform. Fall 2012. Tested features of new platform and worked with TSS to provide faculty with relevant tools that aid in learning the new platform.

OIT Pilot program for Moodle Learning Management System. Spring 2011

Use platform, test various features, attend monthly meetings and demonstrate platform to faculty during preview meetings.

MBA curriculum committee, Member. Sep 2004-Aug 2010

UmassOnline SOCS Committee, Member. 2009.

The committee was tasked with the selection of a Synchronous Online Collaborative System for the Umassonline.

ISOM Aspiration Committee, Member. 2008.

OIT Pilot program for the Learning Management System: Webct Vista 4. 2006.

Used platform in courses, tested various features, attended monthly meetings, provided feedback and demos for faculty that are new to webct vista.

UmassOnline SOCS Committee, Member, 2006.

The committee was tasked with the selection of a Synchronous Online Collaborative System. Committee selected Wimba classroom online web conferencing for a three-year license.

Women in Business MBA, Advisor, Feb 2005-Aug 2010

Professional Experience

1 Consulting, Inc......Sept. 1994 – 2024

Owner

1 Consulting advises entrepreneurs and small businesses in the areas of business strategy, operations, deployment of online services, and technology integration and evaluation.

Between 1994 and 2000 1 Consulting offered specialized software for Data Envelopment Analysis (DEA). The software was used for efficiency measurements in economics, production, health care, education and other fields. Clientele of more than 100 organizations including universities, research institutes, government agencies and large companies such as John Deere Health Care and Merrill Lynch.