

**Michael E. Gorman**

**Science, Technology & Society  
Thornton Hall, SEAS  
University of Virginia  
Charlottesville, VA 22904-4744**

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434/924-4306 (fax)  
meg3c@virginia.edu**

**BORN:**

February 21, 1952. Married, three children.

**EDUCATION:**

University of New Hampshire, Ph.D. Social Psychology, 1981.  
M.A. Social Psychology 1978  
Dissertation Title: "How Communication and Confirmatory  
Strategies Affect the Search for Truth."  
Occidental College, B.A. Psychology, 1974, Magna Cum Laude

**POSITIONS HELD:**

Chair, Division of Technology, Culture, and Communication, University of  
Virginia, 2000-3

Professor, University of Virginia, 1999-

Associate Professor, University of Virginia, 1990-99

Visiting Associate Professor, University of Virginia, 1988-90

Associate Professor of Psychology and the Humanities, Michigan  
Technological University, 1987-8

Assistant Professor of Psychology and the Humanities, Michigan  
Technological University, 1981-7

Dissertation Fellow, University of New Hampshire, 1980-1

Instructor, Department of Psychology, University of New  
Hampshire, 1978-80

Graduate Teaching Assistant, Department of Psychology, University of New  
Hampshire, 1976-8

**FELLOWSHIPS and AWARDS:**

Sigma Xi Lecturer, 2004-2006

A.D. Welliver, Boeing, Summer 1998

Shannon Center for Advanced Studies, 1997

Teaching Technology Institute, University of Virginia, 1996-1997

Thomas Jefferson Center for Educational Design, 1996-Present

**GRANTS (as Principal Investigator):**

NUE: Societal Dimensions of Nanotechnology: A Course

Connecting Communities

With James F. Groves, Joanne Cohoon, Nathan S. Swami, Patricia H. Werhane

NSF EEC-0836648 (\$199,991)

08/08

Trading zones, interactional expertise and interdisciplinary collaboration

NSF (\$10,000)

Boston Consulting Group (\$10,000)

08/05

Societal Dimensions of Nanotechnology

NSF (\$100,000)

05/02

Earth Systems Engineering Management

AT&T (\$100,000)

03/02

From Groups to E Teams in One Course: An Experiment

NCIIA Grants Program, Lemelson Foundation (\$13000)

With Matthew M. Mehalik

03/02-09/03

Workshop on Cognitive Studies of Science & Technology

National Science Foundation (\$20,000)

06/00 – 11/01

Moral Imagination, Invention & Design

National Science Foundation (\$150,000)

With Garrick Louis & Pat Werhane

08/15/00-07/31/03

Inventing for a Better Global Environment: A Comparative Analysis of Two Networks

National Science Foundation (\$66,102)

With Matthew M. Mehalik

9/2/98-9/2/00

REU Supplement

Inventing for a Better Global Environment: A Comparative Analysis of Two Networks

National Science Foundation (\$10,000)

6/99-8/00

Invention & Design

NCIIA Grants Program, Lemelson Foundation (\$6,000)

1/98 – 5/00

Putting Ethics at the Heart of Environmental Design

National Science Foundation (\$126,484)

With Patricia Werhane and William T. Scherer

6/97-5/00

REU Supplement: Putting Ethics at the Heart of Environmental Design

National Science Foundation (\$15,000)

7/97 – 5/00

Virginia Composite Wheel Team

NCIIA Grants Program, Lemelson Foundation (\$19,718)

9/2/98-9/2/99

The UVA Solar Airship Program

Lemelson Foundation (\$20,000)

5/97-10/97

Using Windmills to Regenerate Anaerobic Soil

NCIIA Grants Program, Lemelson Foundation (\$13,695)

6/96-9/97

The Inventor's Toolkit

NCIIA Grants Program, Lemelson Foundation (\$12,650)

Feb. 1, 1997- July 1, 1997

Turning Students into Inventors, II

Geraldine R. Dodge Foundation (\$20,000)

June 1, 1995-September 1, 1996

Turning Students into Inventors

Lemelson Foundation (\$7600)

Environmental Ethics and Invention: A Case Study

National Science Foundation (\$20,000)

With Patricia Werhane (50%)

September 1994 - August 1995

Turning Students Into Inventors  
Dodge Foundation. (\$20,000).  
Summer, 1994

Using Case-Studies to Teach Invention and Design. Leadership in Science and Humanities Program, jointly funded by the National Science Foundation, the Fund for the Improvement of Post-Secondary Education, and the National Endowment for the Humanities (\$89,979)  
With Larry G. Richards and William T. Scherer  
September 1992-August 1993

Mapping the Innovation Process: An Integration of Cognitive and Social Approaches to the Invention of the Telephone, 1870-1880  
History and Philosophy of Science and Technology Program, National Science Foundation (\$84,000)  
With W. Bernard Carlson  
September, 1991 to June, 1993

A Social Construction of Technological Knowledge: A Network Analysis of the Invention of the Telephone, 1870-1880  
Spencer Foundation (\$7,000)  
With W. Bernard Carlson  
August, 1991

Technological Innovation as a Cognitive Process: A Comparative Study of Telephone Inventors  
National Science Foundation (\$82,430)  
With W. Bernard Carlson  
September, 1990 to June, 1991

The Cognitive Styles of Inventors: Bell, Edison and Gray  
National Science Foundation (\$69,905)  
With W. Bernard Carlson  
September, 1988 to June, 1990

**COURSES CREATED:**

Societal Implications of Nanotechnology  
Service Science, Management and Engineering  
Earth Systems Engineering and Management  
Ethics, Invention and Design (Graduate)  
Invention and Design  
Innovation and Invention in Science and Technology  
Scientific and Technological Thinking

**ADDITIONAL COURSES TAUGHT:**

Systems Engineering Capstone Design  
Technology, Aggression and Peace  
Engineering Ethics and Society  
Utopian Thought in a Technological Society  
Freshman Communication Courses:  
    Research Writing  
    Technical Communication

Psychology:

    Introduction to Psychology  
    Research Methods and Statistics (Graduate and Undergraduate)  
    Social Psychology  
    Educational Psychology  
    Cognitive Psychology  
    Abnormal Psychology and Literature  
    Knowledge Representation and Reasoning

**ADMINISTRATIVE RESPONSIBILITIES AT U.VA.:**

Promotion & Tenure Committee, School of Engineering & Applied Science, 2005-2008  
Chair, Division of Technology Culture & Communications, 2000-3  
Director, Fourth-Year Core Course on Engineering Ethics and Society, 1993-1996  
Chair, Common Reading Experience, 1995  
Secretary, School of Engineering and Applied Science, 1995--

**ADMINISTRATIVE RESPONSIBILITIES AT M.T.U.:**

Chair, Tenure and Promotion Committee, Department of Humanities, 1986-1987  
Chair, Humanities Department Research and Evaluation Committee, 1981-1984  
Major responsibility: Evaluating a \$225,000 program in Writing Across the Curriculum funded by the General Motors Corporation

**BOOKS:**

Gorman, M. E., Tweney, R. D., Gooding, D. C., & Kincannon, A. (Eds.). (2005). *Scientific and technological thinking*. Mahwah, NJ: Lawrence Erlbaum Associates.

Gorman, M.D., M.M. Mehalik, and P.H. Werhane, Ethical and Environmental Challenges to Engineering, 2000, Englewood Cliffs, NJ: Prentice-Hall.

Gorman, M. E., Transforming Nature: Ethics, Invention and Design. Boston: Kluwer Academic Publishers, 1998.

Gorman, M. E., Simulating Science: Heuristics and Mental Models in Technoscientific Thinking. Bloomington: Indiana University Press, 1992.

#### **ARTICLES IN REFEREED ARCHIVAL JOURNALS:**

(Student co-authors are underlined)

Gorman, M. E. (2008). Scientific and technological expertise. *Journal of Psychology of Science and Technology*, 1(1), 23-31.

Raina K. Plowright, Susanne H. Sokolow, Michael E. Gorman, Peter Daszak, and Janet E. Foley (2008) Causal inference in disease ecology: investigating ecological drivers of disease emergence. *Frontiers in Ecology and the Environment*, 6, pp. tba

Wardak, A., Gorman, M. E., Swami, N., & Rejeski, D. (2007). Environmental regulatory implications for nanomaterials under the toxic substances control act (TSCA). *IEEE Technology & Society*, 26(2), 48-56.

Gorman, M. E. (2006). Scientific and technological thinking. *Review of General Psychology*, 10(2), 113-129.

Gorman, M. E. (2005). Earth Systems Engineering Management: human behavior, technology and sustainability. *Resources, Conservation & Recycling*, 44(3), 201-213.

Gorman, M.E., Malow, C. & Ratner R. (2005) “Teaching engineers about technology and policy: A simulation of the decisions involved in exploring Mars” *World Transactions in Engineering and Technology Education*, 4 (1), 21-24,

Werhane, P. H., & Gorman, M. E. (2005). Intellectual property-rights, moral imagination, and access to life-enhancing drugs. *Business Ethics Quarterly*, 15(4), 595-614.

Gorman, M. E., Groves, J. F., & Catalano, R. K. (2004) Societal dimensions of nanotechnology. *IEEE Technology and Society Magazine*, 29(55-64).

Gorman, M. E., Allenby, B., Mehalik, M. M., & Hall, K. (2003). Earth systems engineering management: A course for students from multiple disciplines. *World Transactions on Engineering and Technology Education*, 2(1), 29-32.

Gorman, M. E. (2002). Turning students into professionals: Types of knowledge and ABET engineering criteria. *Journal of Engineering Education*, 91(3), 339-344.

Gorman, M. E. (2002). Levels of expertise and trading zones: A framework for multidisciplinary collaboration. *Social Studies of Science*, 32(5), 933-938.

Gorman, M. E. and M. M. Mehalik (2002). "Turning Good into Gold: A Comparative Study of Two Environmental Invention Networks." Science, Technology & Human Values, 499-529

Gorman, M.E. (2002). Types of Knowledge and Their Roles in Technology Transfer. Journal of Technology Transfer, 219-31.

Gorman, M.E. (2001). Turning Students into Ethical Professionals. IEEE Technology and Society Magazine, 20 (4), 21-27.

Gorman, M.E. et al. (2001). Transforming the Engineering Curriculum: Lessons Learned from a Summer at Boeing. Journal of Engineering Education, 90 (1): 143-9.

Gorman, M.E., M. Hertz, G. Louis, L. Magpili, M. Mauss, M. Mehalik, J. Tuttle (2000). Integrating Ethics & Engineering: A Graduate Option in Systems Engineering, Ethics and Technology Studies. Journal of Engineering Education, 89 (4): 461-470.

Plucker, J.A. and M.E. Gorman. (1999). Invention is in the Mind of the Adolescent: Effects of a Summer Course One Year Later. Creativity Research Journal, 12(2): pp. 141-150.

Gorman, M. E. & Robinson, J. K. (1998). Using History to Teach Invention and Design: The Case of the Telephone. Science and Education, 7, 173-201.

Feist, G., & Gorman, M.E. (1998). The Psychology of Science: Review and Integration of a Nascent Discipline. Review of General Psychology, 2(1), 3-47.

Gorman, M.E., Plucker, J.A., & Callahan, C.M. (1998). Turning Students into Inventors: Active Learning Modules for Secondary Students. Phi Delta Kappan, March 530-535.

Gorman, M.E. (1997). Mind in the World: Cognition and Practice in the Invention of the Telephone. Social Studies of Science, 27 (4), 583-624.

Gorman, M. E. (1995). Confirmation, Disconfirmation and Invention: The Case of Alexander Graham Bell and the Telephone. Thinking and Reasoning, I, 31-53.

Gorman, M.E., & Kagiwada, J.K. (1995). Invention, design and discovery: A transdisciplinary quest. New Literary History, 26, 627-640.

Gorman, M. E., Richards, L. G., Scherer, W. T., & Kagiwada, J. K. (1995). Teaching invention and design: Multi-disciplinary learning modules. Journal of Engineering Education, 175-186.

Plucker, J.A., & Gorman, M.E. (1995). Group interaction during a summer course on invention and design for high ability secondary students. The Journal of Secondary Gifted Education (Summer), 258-272.

Richards, L.G., Gorman, M.E., Scherer, W.T., & Landel, R.D. (1995), Promoting active learning with cases and instructional modules. The Journal of Engineering Education, 84(4), 375-382.

Gorman, M. E. (1991). Counterfactual simulations of science: A response to Farris and Revlin., 21(3), 561-564.

Gorman, M. E. & Carlson, W. B. (1990). Interpreting invention as a cognitive process: The Case of Thomas Edison, Alexander Graham Bell and the telephone. Science, Technology and Human Values, 15, 131-164.

Carlson, W. B. & Gorman, M. E. (1990). Understanding invention as a cognitive process: The case of Thomas Edison and early motion pictures, 1888-1891. Social Studies of Science, 20, 387-430.

Gorman, M. E. (1989). Beyond strong programmes: How cognitive approaches can complement the sociology of scientific knowledge. Social Studies of Science, 19(3), pp. 643-653.

Gorman, M. E. (1989). Error, falsification and scientific inference: an experimental investigation. Quarterly Journal of Experimental Psychology, 41A(2), 385-412.

Gorman, M. E. (1989). Artificial epistemology? Social Studies of Science, 19(2), pp. 374-380.

Gorman, M. E. (1987) Will the next Kepler be a computer? Science and Technology Studies, 5, 63-65.

Gorman, Michael E., Stafford, A. & Gorman, Margaret E. (1987) Disconfirmation and dual hypotheses on a more difficult version of Wason's 2-4-6 task. Quarterly Journal of Experimental Psychology, 39, 1-28.

Gorman, M. E. (1986) How the possibility of error affects falsification on a task that models scientific problem-solving. British Journal of Psychology, 77, pp. 65-79.

Gorman, M. E. (1986) Falsification in experimental and classroom simulations. School Science and Mathematics, pp. 306-321.

Gorman, Michael E. & Gorman, Margaret E. (1984). A Comparison of disconfirmatory, confirmatory and control strategies on Wason's 2-4-6 task. Quarterly Journal of Experimental Psychology, 36A, 629-648.

Gorman, Michael E., Gorman, Margaret E., Latta, R. M. and Cunningham, G. (1984). How disconfirmatory, confirmatory and combined strategies affect group problem-solving. British Journal of Psychology, 75, 65-79.

Gorman, M. E. (1984) Using the Eden Express to teach introductory psychology. Teaching of Psychology, 11, 39-40.

Gorman, M. E. (1981). Pre-war conformity research in social psychology: The approaches of Floyd H. Allport and Muzafer Sherif. Journal of the History of the Behavioral Sciences, 17, 3-14.

#### **ARTICLES IN REFEREED PROCEEDINGS:**

Gorman, M.E., Hertz, M. & Magpili, L.M. (2000) Combining Ethics and Design: Monsanto and Genetically Modified Organisms. Proceedings of the 2000 ASEE Conference, St. Louis, MO.

Gorman, M.E. (1999) A Course of Invention and Design. Proceedings of the 1999 ASEE Conference, Charlotte, NC.

Gorman, M.E., Mehalik, M.M. & Richards, L.G. (1999) The Continuing Evolution of a Course on Invention and Design. Proceedings of the 1999 Frontiers in Education Conference, San Juan, Puerto Rico.

Gorman, M.E., Diersen, S.E., Mehalik, M.M., & Stocker, J.M. (In Press). Using Detailed, Multimedia Cases to Teach Engineering Ethics. In D. F. Ollis, K. Neeley, & H. Luegenbiehl (Eds.), Liberal Education in 21st Century Engineering: A Response to ABET 2000.

Gorman, M. E. & Matthew Mehalik (1996). Putting Environmental Ethics at the Center of Design. Proceedings of the American Society of Engineering Education, Washington, D. C.

Richards, L. G., Gorman, M., Kagiwada, J., Scherer, W. T., Pet-Edwards, 1994 Annual Conference Proceedings: J., Carlson, W. B., and Cline, Alan, "Teaching Invention and Design", American Association for Engineering Education", Volume 1, ASEE, Washington, D. C., 1994, pgs. 192-197.

Richards, L. G., Gorman, M., "The Case Methods for Teaching Engineering Design", 1994 Annual Conference Proceedings: American Association for Engineering Education", Volume 2, ASEE, Washington, D. C., 1994, 2930-2935.

Richards, L. G., Gorman, M. E., and Scherer, W. T., "Case Based Education in the Age of Internet." FIE'95, Atlanta, GA, Nov. 1995, in Engineering Education for the 21st Century, D. Budny and R. Herrick, eds., Frontiers in Education 25th Annual Conference, Nov. 1995, IEEE Catalog N. 95CH35867, also published on CD-Rom and the World Wide Web.

#### **ARTICLES IN ARCHIVAL JOURNALS:**

Gorman, M.E. (1997) Cognitive psychology of Science. Systemi Intelligenti.

Gorman, M.E., & Kagiwada, J.K. (1995). Invention, design and discovery: A transdisciplinary quest. New Literary History, 26, 627-640.

Gorman, M., & Rosenwein, R. (1995). Simulating social epistemology. Social Epistemology, 9(1), 71-79.

Gorman, M.E., Mehalik, M. M., Carlson, W. B., & Oblon, M. (1993). Alexander Graham Bell, Elish Gray and the Speaking Telegraph: A Cognitive Comparison. History of Technology, 15, 1-56.

Gorman, M. E. (1990). Computationalism: The new behaviorism? Social Epistemology, 4, 165-7.

Hacker, K. L., Freedman, E. G., Gorman, M. E. & Isaacson, R.. The emergence of task representations in small group simulations of scientific reasoning. Journal of Social Behavior and Personality.

Gorman, M. E. & Carlson, W. B. (1989). Can experiments be used to understand experimental science? Social Epistemology, 2, pp. 89-106.

Gorman, M. E. (1988). Writing about voting: A bridge between personal experience and research. Iowa English, 36, 56-62.

Gorman, M. E. & Meese, G. P. (1985) Nuclear weapons in the composition classroom. Kentucky English Bulletin, 34, 54-73.

Latta, R. M. & Gorman, M. E. (1984). The small group: a bridge between sociology and social psychology, Psychological Reports, 54, 947-50.

Young, A., Gorman, Michael E. & Gorman, Margaret E. (1984). The 1983-4 Writing and Literature Survey: courses and programs. Association of Departments of English Bulletin, 79, 48-55.

Young, A., Gorman, Michael E. & Gorman, Margaret E. (1983). The 1982-3 Writing and Literature Survey: courses and programs. Association of Departments of English Bulletin, 79, 48-55.

Gorman, M. E., Law, A. and Lindegren, T. (1981) Making students take a stand: Active learning in introductory psychology. Teaching of Psychology, 8, 164-166. Reprinted in Benjamin, L. T., Daniels, R. S. & Brewer, C. L. (Eds.) The Handbook for Teaching Introductory Psychology. Hillside: Lawrence Erlbaum Associates, 1984.

Gorman, M. E. (1978). Towards a unification of physics and psychology. Et Cetera, 35, 400-407.

Gorman, M. E. (1978). A. J. Korzybski, J. Krishnamurti and Carlos Castaneda: A modest comparison. Et Cetera, 35, 162-174.

### **BOOK CHAPTERS:**

Gorman, M.E. (2008). Service Science, Management And Engineering: A Way of Managing Sociotechnical Systems. In Bill Hefley and Wendy Murphy (Eds), *Service Science, Management and Engineering: Education for the 21st Century*. Dordrecht: Springer, pp.

77-82.

Gorman, M. E., (2007). Cognition, Environment and the Collapse of Civilizations. In L. Magnani & L. Ping (Eds.), *Model-Based Reasoning in Science, Technology and Medicine* (Vol. 64, pp. 217–227): Dordrecht: Springer.

Gorman, M. E., & Groves, J. (2007). Training students to be interactional experts. In M. C. Roco & W. S. Bainbridge (Eds.), *Societal Implications of Nanoscience and Nanotechnology II: Maximizing Human Benefit* (pp. 301-305). Arlington, VA: National Science Foundation.

Gorman, M. E. (2006). Thinking Like an Astronomer. In A. Heck (Ed.), *Organizations and Strategies in Astronomy* (Vol. 7, pp. 419-428). Dordrecht: Springer.

Gorman, Michael E. (2006). Technological thinking and moral imagination. In *Model-based reasoning in science and engineering: Cognitive science, epistemology, logic.*, ed. Lorenzo Magnani, 167-184. London: College Publications.

Gorman, M. E., & Groves, J. (In Press). Training students to be interactional experts. In M. C. Roco & W. S. Bainbridge (Eds.), *Societal Implications of Nanoscience and Nanotechnology II: Maximizing Human Benefit*. Arlington, VA: National Science Foundation

Gorman, M. E., & Groves, J. (2006). Collaborating on converging technologies: Education and practice. In W. S. Bainbridge & M. C. Roco (Eds.), *Managing nano-bio-info-cogno innovations* (pp. 71-88). Dordrecht, The Netherlands: Springer.

Gorman, M. E. (2005). Levels of expertise and trading zones: Combining cognitive and social approaches to technology studies. In M. E. Gorman, R. D. Tweney, D. C. Gooding & A. Kincannon (Eds.), *Scientific and technological thinking* (pp. 287-302). Mahwah, NJ: Lawrence Erlbaum Associates.

Werhane, P., Mills, A., & Gorman, M. E. (2005). Stakeholder Networks and Ethical Challenges to Pharmaceutical Commitments in Less Developed Countries. In P. Illingsworth (Ed.), *The power of Pills: Social, Ethical, and Legal Issues in Drug Development, Marketing, and Pricing*. London: Pluto Press.

Werhane, P. H., & Gorman, M. (2005). Intellectual property rights, access to life-enhancing drugs, and corporate moral responsibilities. In M. A. Santoro & T. M. Gorrie (Eds.), *Ethics and the Pharmaceutical Industry* (pp. 260-281). Cambridge: Cambridge University Press.

Gorman, M. E. (2005). Levels of expertise and trading zones: Combining cognitive and social approaches to technology studies. In M. E. Gorman, R. D. Tweney, D. C. Gooding & A. Kincannon (Eds.), *Scientific and technological thinking* (pp. 287-302). Mahwah, NJ: Lawrence Erlbaum Associates.

Gorman, M. E., Groves, J. F., & Shrager, J. (2004). Societal Dimensions of Nanotechnology as a

Trading Zone: Results from a Pilot Project. In D. Baird, A. Nordmann & J. Schummer (Eds.), *Discovering the Nanoscale* (pp. 63-73). Amsterdam: IOS Press.

Gorman, M.E., & Plucker, J.A. (In Press). Teaching invention as critical creative processes: A course on technoscientific creativity. In M.A. Runco (Ed.), Critical Creative Processes, Norwood, NJ: Ablex Publishing Corporation.

Gorman, M.E., Imaginative Design Challenges to “Do We Consume too Much?”, in Environmental Challenges to Business, J. Reichart and P. Werhane, Editors. 2000, Society for Business Ethics: Bowling Green, OH. p. 135-142.

Gorman, M. E. (1996). Psychology of science. In W. O’Donohue & P. Kitchener (Eds.), Psychology and Philosophy: Interdisciplinary Problems and Responses, Allyn & Bacon, 50-65.

Gorman, M. E. (1995) Hypothesis Testing. In S. Newstead & J. Evans (Eds).. Perspectives on Thinking and Reasoning, 217-240.

Gorman, M. E. (1994). Toward an experimental social psychology of science: Preliminary results and reflexive observations. In W. R. Shadish (Ed.), Social Psychology of Science (Guilford Press), 181-196.

Shadish, W.R., Fuller,S., & Gorman, M.E. (1994). Social psychology of science: A conceptual and empirical research program. In W.R. Shadish & S. Fuller (Eds.), Social Psychology of Science (pp. 3-123). New York: Guilford Press.

Gorman, M. E. (1993). Simulating social epistemology: Experimental and computational approaches. In R. Giere (Ed.) Cognitive Models of Science, Minnesota Studies in the Philosophy of Science (University of Minnesota Press), 400-426.

Gorman, M. E. (1992). Using experiments to determine the heuristic value of falsification. In M. Keane & K. Gilhooly (Eds.), Advances in the Psychology of Thinking, Vol. I:147-176.

Carlson, W. B. & Gorman, M. E., (1992) Using A Cognitive Framework to Understand Invention. In B. Weber & D. Perkins, The Inventing Mind (Oxford University Press), 48-79.

Gorman, M. E. (1989). Error and scientific reasoning: an experimental inquiry. In S. Fuller, M. De May, T. Shinn & S. Woolgar (Eds.) (1989). The Cognitive Turn: Sociological and Psychological Perspectives on Science. Sociology of the Sciences: A Yearbook, 13. Dordrecht: Kluwer Academic Publishers, 41-70.

Carlson, W. B. & Gorman, M. E. Thinking and Doing at Menlo Park: Edison's Development of the Telephone, 1876-1878. In W. Pretzer, (Ed.) (1989) Thomas Edison's Menlo Park Laboratory, Henry Ford Museum Press.

In A. Young & T. Fulwiler (Eds.) (1986) Writing Across the Disciplines: Research into Practice, Boynton/Cook:

Gorman, M. E. Developing a research model

Gorman, M. E., Gorman, M. E. & Selfe, C. Writing-Across-the-Curriculum and Longitudinal Changes in Writing Apprehension at Michigan Technological University.

Gorman, M. E., Gorman, M. E. & Young, A. The value and function of poetic writing.

Fulwiler, T., Gorman, M. E. & Gorman, M. E. Changing faculty attitudes toward writing.

Kalmbach, J. & Gorman, M. E. How teachers teach writing: a survey of classroom practices.

#### **COMMENTARY:**

Gorman, M.E. (2000). Heuristics in Technoscientific Thinking. Behavioral & Brain Sciences. 23 (5).

Gorman, M.E. (1999). Implicit Knowledge in Engineering Judgement and Scientific Reasoning. Behavioral & Brain Sciences. 22(5), 767-8.

#### **ENCYCLOPEDIA ENTRY:**

Gorman, M.E. (1999). Alexander Graham Bell: Inventor of the Telephone. Encyclopedia of Creativity, Vol. I, 185-7.

#### **BOOK REVIEWS:**

Gorman, M.E. (1995). Creativity: A review of Creativity in Invention and Design: Computational and Cognitive Explorations of Technological Creativity, by Subvata Dassuputa. Design Book Review, Issue 3516, Winter/Spring, pp. 34-5.

Gorman, M.E. (1995). A review of Paradigms and Barriers: How Habits of Mind Govern Scientific Beliefs, by Howard Margolis. American Historical Review, February, pp. 137-38.

Norbert Wiener. Invention: The Care and Feeding of Ideas, Technology and Culture, July, 1994.

Donald A. Norman. Things That Make Us Smart in Science Books and Films, December, 1993: Volume 29/92:262.

Karl Popper. In Search of a Better World in Science Books and Films, May, 1993: Vol. 29(4): 100.

Gorman, M.E. (1992). Using Technology to Model Technoscience, A review of Computational Models of Scientific Discovery and Theory Formation, by J. Shrager and P. Langley (eds.). Social Studies of Science, Vol.22, pp.407-11.

Gorman, M. E. (1991). Towards a psychology of science: A Review of Gholson et al's Psychology of Science. Social Studies of Science, 21: 369-74.

Gorman, M. E. (1991). Replication, reliability and peer review: A case study. Behavioral and Brain Science, 14:1.

Gorman, M. E. (1990). On scientific writing: A review of Charles Bazerman's Shaping Written Knowledge. Social Studies of Science, 20: 169-172.

### **OBITUARIES:**

M.E. Gorman (2008) Obituary for Michael J. Mahoney (1942-2006) *Journal of Psychology of Science and Technology*, 1(1), 32.

M.E. Gorman (2008) Obituary for Michael J. Mahoney (1942-2006) *Social Studies of Science* 38 (1), 159-160.

### **ENGINEERING ETHICS CASE-STUDIES:**

Mehalik, M.M., Gorman, M.E., & Werhane, P. (1997). Rohner Textil AG (A-D) (Business Case E-0107 to E-0110). Charlottesville, VA: Darden Graduate School of Business Administration, University of Virginia.

Sonenshein, S., Gorman, M., & Werhane, P. (1997). Solar Electric Light Fund (A), (B), and Teaching Note (Darden Case Bibliography UVA-E-0112). Charlottesville, VA: Colgate-Darden School of Business.

Gorman, M.E. (1996). American Solar Network A & B (Business Case E-0097, E-0098). Charlottesville, VA: Darden Graduate School of Business Administration, University of Virginia.

Mehalik, M.M., Gorman, M.E., & Werhane, P. (1996). DesignTex, Inc. A & B (Business Case E-0099, E-0100). Charlottesville, VA: Darden Graduate School of Business Administration, University of Virginia.

Stocker, J.M., Gorman, M.E., & Werhane, P. (1996). Dow Corning A: Breast Implant Design (Business Case E-0104). Charlottesville, VA: Darden Graduate School of Business Administration, University of Virginia.

### **ERIC REPORTS:**

Gorman, M. E. The effect of disconfirmatory instructions on scientific problem-solving. ERIC Clearinghouse for Science, Mathematics and Environmental Education, April, 1984 (ED 244 785).

Young, A., Gorman, M. E. & Gorman, M. E. The value and function of poetic writing. ERIC Clearinghouse on Reading and Communication Skills, September, 1983 (ED 228 635).

Gorman, M. E., Lind, E. A. and Williams, D. C. The effects of previous success or failure on a majority-minority confrontation. *Resources in Education*, 1980, 15, 187. (ED 177 257).

### **PUBLICATIONS IN PROFESSIONAL MAGAZINES:**

Gorman, M.E. (December, 1995). An error showed the way. *Ericsson Connexion*, p. 43.

Gorman, M. E. & Carlson, W. B., Mapping invention and design, *CHEM TECH*, October, 1992, 534-591.

Gorman, M. E., Who should own a Xerox 820-II. *Desktop Computing*, April, 1983, 79-82.

Gorman, M. E., Dead on arrival. *Desktop Computing*, January, 1983, 66-68.

Gorman, M. E., The Hustle: How to get good grades and still enjoy college. *College Board Review*, 1981, 120, 21 ff.

### **WORKSHOPS ORGANIZED**

Scientific and Technological Thinking, University of Virginia, March 25-27, 2001, supported by NSF grant SES-0000573 and by the Boston Consulting Group.

Trading Zones and Interactional Expertise, Arizona State University, May 22-24 2006, (<http://bart.tcc.virginia.edu/Tradzoneworkshop/index.htm>), supported by the NSF (SES-0526096), by BCG and by the Center for Nanotechnology & Society.

### **PRESENTATIONS & INVITED ADDRESSES:**

Gorman, M.E. and Fauss, E. Risk-based Regulation of Nanotechnology? University of Minnesota, Minneapolis, MN May 21, 2008

Gorman, M.E. A Framework for Interdisciplinary Collaboration in Science and Technology Stanford University, Palo Alto, CA, *Symposium on Computational Approaches to Creativity in Science* March 29, 2008

Gorman, M.E. Trading zones, interactional expertise and moral imagination, Vincentian International Business Ethics Conference Chicago, IL November, 1-3, 2007

Gorman, M.E. Interactional Expertise and Service Science, Management & Engineering, First Annual Studies of Experience and Expertise Workshop, Cardiff, UK August, 2008

Gorman, M.E. “Bycatch Reduction, Trading Zones and Shared Expertise.” AAAS, San Francisco, February 16, 2007

Gorman, M.E. "Trading Zones," Interactional Expertise and Service Science." Presented at SSME conference, IBM Palisades, October 6, 2006

ME. Gorman "Cognition, sustainability and the collapse of civilizations" Invited presentation to the Tardis Conference, Estes Park, Colorado, September 11, 2006

M.E. Gorman "Embeddedness, embodiment and the future of cognitive psychology of science" Invited Keynote Address, International Colloquium on the Psychology of Science, Zacatecas, Mexico, September, 2006

Gorman, M.E. "Cognition, environment and the collapse of civilizations." Invited lecture to the Institute of Policy & Management, Chinese Academy of Sciences. Beijing, July 12, 2006

Gorman, M.E. "Cognition, cooperation and the collapse of civilizations." Invited lecture at South China University of Technology, Guangzhou, July 4, 2006.

Gorman, M.E. "Cognition, modeling and the collapse of civilizations." Invited Keynote Address, MBR06, Guangzhou, China, July 3, 2006.

Gorman, M.E. "Trading zones, interactional expertise and interdisciplinary collaboration." Opening address to the workshop on trading zones & interactional expertise, Arizona State University, May 22, 2006.

Gorman, M.E. "Trading zones, interactional expertise and emerging technologies." Paper presented to the Society for the Social Studies of Science, Pasadena, CA, October 21, 2005.

Gorman, M.E. "Nanotechnology education: Ethics, collaboration and systems thinking." Invited address, Rice University, October 10, 2005

Gorman, M.E. and Werhane, P. "Moral Imagination, Trading Zones, and Converging Technologies" Paper presented to the Association for Practical and Professional Ethics, February 25, 2005.

Gorman, M.E. "Technological thinking and moral imagination." Invited address to MBR04, Pavia, Italy, December, 18, 2004.

Gorman, M.E. "Trading zones, moral imagination and socially sensitive computing." Paper presented at MBR04, Pavia, Italy, December, 16, 2004.

Gorman, M.E. and Werhane, P. "Moral Imagination, Trading Zones, and Converging Technologies" Paper presented to The Eleventh Annual International Business Ethics Conference, Chicago, IL October, 22, 2004.

Gorman, M.E. "Types of Knowledge and Their Roles in Education and Intellectual Property." Sigma Xi lecture given to IBM Microelectronics, Essex, VT. September 29, 2004.

Gorman, M.E. “Technology & hope.” Sigma Xi lecture given at State University of Plattsburgh, NY and St. Michaels College, Vermont, Sept 27-8, 2004

Gorman, M.E. “Social values and emerging technologies” Invited keynote address, Breakthrough Technologies for the World’s Biggest Problems, Arlington Institute, Virginia, April 27, 2004

Gorman, M.E. “Societal and Ethical Dimensions of Converging Technologies: Trading Zones and Moral Imagination” Rensselaer Polytechnic University, March 31, 2004

Gorman, M.E. “Societal and Ethical Dimensions of Converging Technologies: A Framework for Collaboration” Arizona State University, March 10, 2004

Gorman, M.E. “Collaboration on Converging Technologies: Education and Practice” Invited keynote address, Converging Technologies Conference, New York, February 26, 2004

Gorman, M.E. “Earth Systems Engineering Management : human behavior, technology, and sustainability.” Invited Keynote address to Pres’03, 6th Conference on Process Integration, Modelling and Optimisation for Energy Saving and Pollution Reduction, Hamilton, Ontario, October 27, 2003.

Gorman, M.E. “Levels of Expertise and Trading Zones: A Framework for Multidisciplinary Collaboration Levels.” Presented to the Society for Social Studies of Science, Atlanta, Friday, October 17, 2003.

Gorman, M.E. “Integrating Nanotechnology and the Environment: A Framework for Interdisciplinary Collaboration.” Invited address at “Nanodays”, Rice University, Monday, October 13, 2003.

Gorman, M.E. “Emerging Technologies and Environmental Thinking: A Framework for Interdisciplinary Collaboration.” Invited address to the Duke University Marine Laboratory, September 3, 2003.

Gorman M.E., Townsend, I.H. & Hertz, H, “Frankenstein, the Terminator, and the Future of Food: Using the Monsanto Case Study and Shelley’s *Frankenstein* to Teach Moral Imagination.” Presented to the Humanities & Technology Association, Charlottesville, Virginia, UVA, October 20, 2000.

Gorman, M.E., “Three Network States and Their Consequences for Environmental Sustainability.” Presentation to the Society for Social Studies of Science, Vienna, Austria, September 27-30, 2000.

M. E. Gorman, “Commentary on Gooding, Simon & Tweney on Faraday.” Presentation to the History of Science Society, Pittsburgh, November 6, 1999.

M.E. Gorman, “Commentary on Steven Epstein, *Impure Science: AIDs, Activism, and the Politics of Knowledge.*” Presentation to the Society for Social Studies of Science, San Diego, October 28, 1999.

M.E. Gorman, “Inventing a Graduate Option in Engineering, Ethics, and Technology Studies.” Presentation to the Society for Social Studies and Science, San Diego, October 30, 1999.

Gorman, M.E. & Simina, M., “The Invention of the Telephone: A Cognitive Analysis.” Presented to the Cognitive Science Society, Vancouver, BC, August 1999.

Gorman, M.E. “Systems Engineering, Ethics & Technology Studies: A Graduate Option.” Paper presented at the Association for Practical and Professional Ethics Conference, Washington, DC, April 1999.

M.E. Gorman, “Teaching Invention, Design and Entrepreneurial Thinking.” Paper presented at the National Collegiate Inventors and Innovators Alliance Conference, Washington, D.C., March 13, 1998.

M.E. Gorman, “Infrastructure for Engineering Ethics.” Paper presented at the Association for Practical and Professional Ethics Conference, Dallas, TX, February 27, 1998.

M.E. Gorman, “Reinventing Invention and Design.” Paper presented at the Frontiers in Education, Salt Lake City, UT, November, 1997.

M.E. Gorman, “Creating A Sustainable Tomorrow.” Paper presented at the Society for Social Studies of Science, Tucson, AZ, October 23, 1997.

M.E. Gorman, “Using Detailed, Multimedia Cases to Teach Engineering Ethics.” Paper presented at the American Society for Engineering Education, Milwaukee, WI, June 1997.

M. E. Gorman, Matthew E. Mehalik, & Ingrid Soudek, “Toward A Sustainable Tomorrow: Engineering Design and Ethics.” Paper presented at Beyond Green: Ethical Values in Environmental Conflicts, University of Virginia, Charlottesville, Virginia, April 4, 1997.

M. E. Gorman, Respondent to “Do We Consume Too Much?”, Mark Sagoff, at Environmental Challenges to Businesses: 1997 Ruffin Lecture Series, University of Virginia, Charlottesville, Virginia, April 4-6, 1997.

M. E. Gorman, “Virtual E-Teams, Virtual Members, and Other Useful Internet Phenomena”. Presented at NCIIA: The 1997 National Conference, Washington, D. C., March 7-9, 1997.

M. E. Gorman & Patricia Werhane, “Environmental Engineering and Environmental Ethics: Connections and Conundrums.” Paper presented to the Association for Practical and Professional Ethics, Arlington, Virginia, March 8-9, 1997.

Charles Twardy & M.E. Gorman, “World Wide Web and original source scholarship: Alexander Graham Bell On-line.” Paper presented to the Society for Social Studies of Science, Charlottesville, VA., October 14, 1995.

L.G. Richards, M.E. Gorman & W.T. Scherer, "Case-based reasoning in the age of internet," Paper presented to the Frontiers in Education Conference, Atlanta, GA., November 2, 1995.

Gorman, M. E., & Plucker, J. , "Teaching invention and design," Paper presented to the National Association for Gifted Children, Salt Lake City , Utah, November 11, 1994.

Gorman, M. E., "Simulating social epistemology," Paper presented to the Society for the Social Studies of Science, November, 1994.

Gorman, M. E. 2-4-6: "The once and future task?" Paper presented to the 2nd International Conference on Thinking, Plymouth, England, July 29, 1992.

Gorman, M. E. "From laboratory to life: experimental studies of scientific thinking," Paper presented to the XXV International Congress of Psychology, Brussels, Belgium, July 24, 1992.

Gorman, M. E., "The role of mental models, heuristics and mechanical representations in technological innovation," Paper to be presented to the Society for the Social Studies of Science, Costa Mesa, CA, November, 1989.

Gorman, M. E., "The discourse of a scientist studying science: A reflexive analysis," Paper presented to the Society for Literature and Science, Ann Arbor, MI, September, 1989.

Gorman, M. E. & Carlson, W. B., "Understanding invention as a cognitive process: The case of Thomas Edison and the telephone, 1876-1878," Presented to the Society for the Social Studies of Science, Amsterdam, November, 1988.

Carlson, W. B. & Gorman, M. E., "Understanding the cognitive processes of inventors: the case of Thomas Edison and early motion pictures," Invited address to the Science Studies Centre, University of Bath, November, 1988.

Gorman, M. E., "How cognitive psychology can contribute to science and technology studies," Invited address to the Center for the Study of Science in Society, Virginia Polytechnic and State University, October, 1988.

Gorman, M. E., "Confirmation, disconfirmation and the search for truth. Invited address to the Committee on the History and Philosophy of Science," University of Maryland, October, 1988.

Gorman, M. E. "Error and scientific reasoning," Presented to the Sociology of the Sciences Yearbook Conference, November, 1987.

Gorman, M. E., "Can experiments be used to study experimental science?" Presented to the Society for the Social Studies of Science, November, 1987.

Gorman, M. E., "How the possibility of error affects problem-solving on tasks that model scientific reasoning," Presented to the Eastern Psychological Association, April, 1987.

Gorman, M. E., “A framework for understanding the cognitive styles of inventors,” Presented to the Society for the History of Technology, October, 1986.

Gorman, M. E., & Bommarito, E., “Nuclear war in the composition classroom: an ethnographic and quantitative analysis,” Session conducted at the Conference on College Composition and Communication, March, 1986.

Gorman, Michael E. & Gorman, Margaret E., “Disconfirmation and dual hypotheses on a more difficult version of Wason's 2-4-6 task,” Presented to the American Psychological Association, August, 1985.

Gorman, M. E., “Falsification in scientific problem-solving: experimental and classroom simulations,” Presented to the Philosophy and Methods of Forestry Research sub-group of the International Union of Forestry Research Organizations, August, 1985.

Gorman, M. E. “Should historians care about experimental studies of scientific reasoning?” Presented to the Midwest Junto of the History of Science Society, April, 1985.

Gorman, M. E., “Using journals to teach Educational Psychology. Presented at the Conference on College Composition and Communication,” March, 1985.

Tweney, R. D. & Gorman, M. E., “Toward a psychology of discovery and justification,” Presented to the Society for Philosophy and Psychology at M.I.T., June, 1984.

Gorman, M. E., “The effect of disconfirmatory instructions on scientific problem-solving,” Presented to the Eastern Psychological Association, March, 1984.

Gorman, M. E., Chair, “Workshop on the process of evaluating cross-disciplinary writing programs. Presented at the Conference on College Composition and Communication,” March, 1983.

Young, A. P. and Gorman, M. E., “Poetic Writing Across the Curriculum,” Presented to the National Council of Teachers of English, November, 1982.

Gorman, M. E., “Edward Alsworth Ross: The first American social psychologist,” Presented to the American Psychological Association, August, 1982.

Gorman, M. E., “How a disconfirmatory strategy affects subjects' performance on two tasks that model scientific reasoning,” Presented at Bowling Green State University, May, 1982.

Gorman, M. E., and Latta, R. M., “The effects of three types of training on group problem-solving,” Presented to the American Psychological Association, August, 1981.

Gorman, M. E., and Latta, R. M., “Reductionism in social psychology: A brief history,” Presented to the American Psychological Association, August, 1981.

Gorman, M. E., “How communication and confirmatory strategies affect the search for truth,” Presented to the Eastern Psychological Association, April, 1981.

Gorman, M. E., “Psychological and sociological social psychology: A historical perspective,” Presented to the Eastern Psychological Association, April, 1980.

Gorman, M. E., “The need for a social psychology: 1900-1930,” Presented to the American Psychological Association, September, 1979.

Gorman, M. E., “The interaction of general semantics and psychology in the 1940's,” Presented to the American Psychological Association, August, 1978.

Gorman, M. E., “Pre-war conformity research in social psychology: 1934-1941,” Presented to the American Psychological Association, August, 1977.

#### **ASSOCIATE EDITOR:**

*Journal of Psychology of Science and Technology*, 2007-  
*Topics in Cognitive Science*, 2008-

#### **PROFESSIONAL MEMBERSHIPS AND RESPONSIBILITIES:**

American Society for Engineering Education  
Association for Practical and Professional Ethics  
Behavioral and Brain Sciences Associate  
Cognitive Science Society  
Society for the Social Studies of Science  
    Governing Council, 1997-1999  
    Chair, 1995 Conference Program Committee

#### **REFEREE:**

Thinking and Reasoning  
Social Studies of Science  
Journal of Experimental Psychology: Learning, Memory and Cognition  
Quarterly Journal of Experimental Psychology  
European Journal of Cognitive Psychology  
Science, Technology and Human Values  
European Journal of Cognitive Psychology

#### **GRANT REFEREE:**

Science, Technology & Society, NSF  
Ethics and Values in Science and Technology, NSF  
History and Philosophy of Science and Technology, NSF

Leadership in Science and Humanities, NEH, FIPSE, NSF

**GRANT PANELS:**

NSF, Science of Science Information Policy, June, 2007 & 2008

NSF, Center for Environmental Implications of Nanotechnology Panel, January, 2008

NSF Nanotechnology Undergraduate Education Panel, February 2004

NSF Information Technology Research Panel, May 2003

NSF, Science, Technology and Society, 1998-2001 (6 panels).

NSF, Engineering Research Center for Bioengineering Educational Technology, Fall, 1998.

NSF, Integrated Graduate Education Research and Training, Fall 1997 and Spring 1998.

National Collegiate Invention and Innovation Alliance, Lemelson Foundation, 1996.

NSF, Instrumentation and Laboratory Improvement, 1996.

Leadership Opportunities in Science and Humanities Education, 1994.

NSF, FIPSE, and NEH Faculty Development Workshop at M.T.U.

August 16, ,2008