

**CURRICULUM VITAE**  
**GERARD J. McCULLOUGH**

**ADDRESS**

Department of Applied Economics  
University of Minnesota  
248 Classroom Office Building  
1994 Buford Avenue  
St. Paul, MN 55108  
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**DEGREES**

Ph.D.	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	1993
M.S.	MASSACHUSETTS INSTITUTE OF TECHNOLOGY	1983
A.B.	GEORGETOWN UNIVERSITY	1967

**ACADEMIC POSITIONS**

University of Minnesota		
Associate Professor of Applied Economics		1996-Present
Director, Minnesota Center for Transportation Studies		1996-2000
National Defense University		2006-2007
Professor of Economics (On leave from Minnesota)		
Universite de Sciences Sociales, Toulouse, France		
Visiting Lecturer in Transport Economics		1996-Present
Massachusetts Institute of Technology		
Senior Lecturer in Civil Engineering		1989-1992
Deputy Director, MIT Center for Transportation Studies		1985-1990

## **OTHER POSITIONS**

Putnam Hayes & Bartlett, Inc., Cambridge, MA Principal Consultant	1993-1996
US Department of Transportation, Washington, DC Special Assistant, Federal Railroad Administrator	1977-1980

## **RESEARCH INTERESTS**

Transportation Economics, Applied Econometrics, Energy Economics

## **TEACHING**

MS Level Transportation Economics (MIT)  
MS Level Transportation Economics (Toulouse)  
MS Level Econometric Analysis (Minnesota)  
PhD Level Econometric Analysis (Minnesota)  
MS Level Macroeconomics (NDU/ICAF)  
MS Level Microeconomics (NDU/ICAF)  
PhD Level Production Economics (Minnesota)

## **AWARDS**

Departmental Nomination, Distinguished Teaching Award 2002/2003  
Departmental Nomination, Distinguished Teaching Award 2001/2002  
Departmental Nomination, Distinguished Teaching Award 2000/2001  
University of Minnesota Faculty Ambassador Program 1998/1999  
University of Minnesota Faculty Ambassador Program 1997/1998  
Winslow Chair (Massachusetts Institute of Technology) 1992/1993  
Shell Fellow (Massachusetts Institute of Technology) 1991/1992

## EXTERNAL COMMITTEE ASSIGNMENTS

Member of the Scientific Committee, IDEI/Bruegel Conference on Regulation, Competition and Investment in Network Industries, Brussels, October 25-26, 2007

Organizer and Member of the Scientific Committee, Fourth Conference on Railroad Industry Structure, Competition and Investment, Madrid, Spain, October 19-21, 2006

Expert Participant, GAO Workshop on Rail Regulation, Washington, DC, February 27, 2006

Organizer and Member Scientific Committee, Third Conference on Railroad Industry Structure, Competition and Investment, Stockholm, Sweden, October 20-22, 2005

Organizer and Member Scientific Committee, Second Conference on Railroad Industry Structure, Competition and Investment, Evanston, Illinois, October 8-9, 2004

Organizer and Member Scientific Committee, First Conference on Railroad Industry Structure, Competition and Investment, Toulouse, France, November 7-8, 2003

National Academy of Science Panel for Review of Federal Railroad R&D, 2002 – present.

Transportation Research Board Committee on Freight Economics, 2002 – 2006.

Twin Cities Airport Task Force Study Commission (Vice Chairman), 2000-2001.

Twin Cities Commuter Rail Advisory Commission (Chairman), 1998-1999.

## REFEREE FOR

Southern Economic Journal  
European Economic Review  
Journal of the European Economic Association  
Review of Economics and Statistics  
Review of Industrial Organization  
Journal of Transportation Economics and Policy  
Journal of the Transportation Research Board  
Transportation Research Board Proceedings

## PUBLICATIONS

Ivaldi, M. and G. McCullough. "Subadditivity Tests for Network Separation Using a Generalized McFadden Cost Function." *Review of Network Economics: Special Issue on Railroad Industry Structure, Competition and Investment*. April 2008.

McCullough, G.J. "Railroad Pricing and Revenue-to-Cost Margins in the Post-Staggers Era" in *Advances in Railroad Economics* Elsevier, August, 2007.

McCullough, Gerard J. "The Liberalization of European Rail Transport: An American View." *Review of European Economic Policy*. Volume 41, Number 6. November/December 2006. pp. 311-314.

McCullough, Gerard J. "U.S. Railroad Efficiency: An Economic View" in *Conference Proceedings XX: Research to Enhance Rail Network Performance*. Transportation Research Board of the National Academies, Washington, DC 2006, pp. D2-D21.

Lazarus, S.S. & McCullough, G.J. "The impact of outsourcing on efficiency in rural and nonrural school districts: The case of pupil transportation in Minnesota." *Journal of Regional Analysis and Policy*. June 2006

McCullough, G. "Trucking Efficiency versus Transportation Efficiency: An Economic Evaluation of TRB Special Report 267." *2003 Journal of the Transportation Research Board*. National Research Council: Washington, D.C. 2003.

Anderson, D. and G. McCullough. *The Incidence of Transportation Costs in the Twin Cities Region* University of Minnesota Center for Transportation Studies Series on *Transportation and Regional Growth*. October 2002. 105 pp.

Johns, G., W. Maki, G. McCullough, and M. Zaidi. *The Competitiveness of the Twin Cities Metropolitan Area and the Minneapolis-St. Paul International Airport: Building and using a Knowledge Base*. Minneapolis, MN: University of Minnesota Center for Transportation Studies. 2002.

Anderson, D., G. McCullough, and J. West. "On the Productivity of Minnesota's Highway Capital." *2002 Economic Report to the Governor*. Minnesota Economic Research Group. pp. 45-55

Ivaldi, M. and G. McCullough. "Density and Integration Effects on Class I U.S. Freight Railroads" *Journal of Regulatory Economics* March, 2001, pp. 161-182.

Anderson, D. and G. McCullough. *The Full Costs of Transportation in the Twin Cities Region* University of Minnesota Center for Transportation Studies Series on *Transportation and Regional Growth*. August 2000. 166 pp.

McCullough, G. "Amtrak Subsidies and Transportation Externalities." *Transportation Research Record March 1998*. National Research Council: Washington, D.C. pp. 27-29.

McCullough, G. "A Marginal Cost Approach to Highway Cost Allocation." *Proceedings of 1994 Conference on Highway Cost Allocation*. Federal Highway Administration: Washington, DC. April 1995.

McCullough, G. *Economists' Statement in Support of a Baseline Study of Surface Freight Transportation Market*. Position Paper on Surface Freight Policy signed by Henry J. Aaron (Brookings), Arnold C. Harberger (Chicago), Richard L. Schmalensee (MIT), and Sir Alan Walters. Cambridge, MA. Putnam, Hayes and Bartlett, Inc. 1995.

Friedlaender, A., E. Berndt and G. McCullough. "Governance Structure, Managerial Background and Economic Performance in the Deregulated Rail Industry." *Brookings Papers on Economic Activity*, Spring 1992. pp. 95-183.

McCullough, G. "The Staggers Act, Bilateral Markets and the Quiet Transformation of the U.S. Railroad Industry." in Gerard J. McCullough and Robert B. McKersie, eds., *The Transformation of Labor Relations in the Transportation Industries*, Cambridge, MA: M.I.T. Center for Transportation Studies, 1989. pp. 1-21.

Martland, C. and G. McCullough. *Measuring Railroad Productivity*. M.I.T. *Studies in Railroad Operations and Economics*, Vol. 39, 1986.

McCullough, G. and C. VanDyke. "Computer-Based Transportation Planning" *Proceedings of the Transportation Research Forum* 1984. pp. 517-523.

### **Current Working Paper**

Friebel, G., G. McCullough and L. Padilla, "Patterns of Restructuring: The U.S. Class 1 Railroads from 1984 to 2004." *CEPR Discussion Paper DP6836*, London, England May 2008

Ivaldi, M., and G. McCullough. "Welfare Tradeoffs in U.S. Rail Mergers." Center for Economic Policy Research (CEPR) *CEPR Discussion Paper 5000* London, England. March, 2005. [Revise and Resubmit] *American Economic Review*.

**FUNDED RESEARCH PROJECTS**

2006	<b>U.S. Department of Agriculture</b>	\$250,000*
	"Modeling and Analysis of Transportation System Requirements For Agricultural Commodities and Biomass for Food, Fuel, and Raw Materials" [Co-PI with Assoc. Prof. Jerry Fruin]	
2003	<b>Association of American Railroads</b>	\$100,000
	Trucking Efficiency versus Transportation Efficiency: An Economic Evaluation of TRB Special Report 267 [PI]	
2002	<b>Metropolitan Airport Commission</b>	\$100,000
	"Characteristics of the Demand for Freight Transportation at MSP Airport." [PI]	
2002	<b>Minnesota Department of Transportation</b>	\$48,644
	"Economic Valuation of the of Minnesota Highway Transportation Network" [PI]	
2001	<b>Association of American Railroads</b>	\$150,000
	"Evaluation of Railroad Cost Structures and Implications for Open Access" [PI]	
2001	<b>U.S. Department of Agriculture</b>	\$250,000*
	"Agricultural and Rural Transportation Systems Analysis and Data Base Development" [Co-PI with Assoc. Prof. Jerry Fruin]	
2001	<b>Minnesota Department of Transportation</b>	\$41,698
	"Economic Estimates of Automobile and Truck Operating Costs" [PI]	
2000	<b>Association of American Railroads</b>	\$50,000
	"Evaluation of State Transportation Agency Ability to Estimate Full Costs of Highway Operations" [PI]	

\*Estimated value. Multi-year grant covers allocated salary and overhead.

- 1999 **Minnesota Department of Transportation** \$200,534  
"The Incidence of Transportation Costs in the Twin Cities Region"  
University of Minnesota Center for Transportation Studies  
Project on *Transportation and Regional Growth* [PI]
- 1998 **Minnesota Department of Transportation** \$200,534  
"The Full Costs of Transportation in the Twin Cities Region"  
University of Minnesota Center for Transportation Studies  
Project on *Transportation and Regional Growth*. [PI]
- 1998 **Minnesota Department of Transportation** \$54,000  
"Passenger and Freight Travel Demand"  
University of Minnesota Center for Transportation Studies  
Project on *Transportation and Regional Growth*. [PI]
- 1997 **U.S. Department of Transportation** \$45,000  
"The Cross-elasticity of Demand for Freight Services  
Between Truck and Rail: Estimated Effect on  
Rail Revenue" [PI]
- 1997 **Minnesota Department of Transportation** \$200,534  
"Assessing the Relationship Between Regional  
Growth & Transportation in the Twin Cities"  
University of Minnesota Center for Transportation Studies  
Project on *Transportation and Regional Growth*. [PI]
- 1995 **The World Bank** \$75,000  
"A Planning Framework for Transportation  
Investments in Sri Lanka: Rail Sector Analysis"  
[Co-PI with Professor Gomez-Ibanez]
- 1994 **Association of American Railroads** \$50,000  
"Marginal Cost Analysis of U.S. Highway  
Agency Expenditures " [PI]
- 1994 **Association of American Railroads** \$100,000  
"Development of a Position Paper  
on Surface Freight Transportation Policy" [PI]



- 1993 **Association of American Railroads** \$55,000  
 "Assessment and Revision of the AAR  
 Intermodal Competition Model for Railroad  
 Diversion Estimates" [PI]
- 1992 **Burlington Northern Railroad** \$75,000  
 "Effect of Bilateral Negotiations on Pricing  
 and Service Levels in Railroad Freight  
 Markets" [PI]

### GRADUATE STUDENT COMMITTEES

Yunhao Chen	PhD Business	PhD Prelim	Active
Gjergji Cici	PhD Finance	PhD Final	Completed
Nelson Granados	PhD Business	PhD Prelim	Active
Sheryl Lazarus	PhD Education	PhD Final	Completed
Dongwon Lee	PhD Business	PhD Prelim	Active
Zining Li	PhD Business	PhD Prelim	Active
Diego Platas	PhD Appl Ec	PhD Final	Completed
James Pritchett	PhD Appl Ec	PhD Final	Completed
A. Rodriguez	PhD Business	PhD Final	Completed
Eng Joo Tan	PhD Business	PhD Prelim	Active
K. Todani	PhD Appl Ec	PhD Final	Completed
Sharon Wade	PhD Business	PhD Prelim	Active
Bin Wang	PhD Business	PhD Prelim	Completed
Lyubov Zech	PhD Appl Ec	PhD Prelim	Completed
Lei Zhang	PhD Civil Engr	PhD Final	Active
Wendy L. Fisher	MA Publ Aff	MA Final	Completed
Anna Jones	MS Appl Econ	MS Final	Completed
Seshasai Kanchi	MS Civil Engr	MS Final	Completed
T. Khitarishvili	MS Appl Ec	MS Final	Completed
P. Parthasarathi	MS Civil Engr	MS Final	Completed
Lei Zhang	MS Civil Engr	MS Final	Completed

## Courses Taught

### MIT

Transportation Economics 1.281	Fall 1989
	Fall 1990
	Fall 1991
	Fall 1992

### University of Minnesota

Applied Economics 5030 - Economic Data Analysis	Spring 1997
	Spring 1998
	Spring 1999

Applied Economics 5031 - Economic Data Analysis	Spring 2000
	Spring 2001
	Spring 2003
	Fall 2004
	Fall 2005

Economics 8202 - Econometric Analysis II	Fall 1999
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Applied Economics 8211 - Econometric Analysis I	Fall 2000
	Fall 2001
	Fall 2002
	Fall 2003
	Fall 2004
	Fall 2005

### National Defense University

Ec 6200 Macroeconomics	Fall 2006
Ec 6201 Microeconomics	Spring 2007

<b>MIT Student Course Evaluations (7.0 scale)</b>			
	Overall Rating	Well prepared	Encouraging
Fall 89 CE 1.281	6.50	5.83	6.33
Fall 90 CE 1.281	6.45	6.57	6.86
Fall 91 CE 1.281	6.23	6.15	6.69
Fall 92 CE 1.281	6.45	6.36	6.73

<b>University of Minnesota Student Course Evaluations (7.0 scale)</b>			
	Overall teaching ability	Knowledge of subject matter	Respect and concern for students
Spring 97 APEC 5030	6.7	6.7	6.0
Spring 98 APEC 5030	5.8	6.6	6.4
Spring 99 APEC 5030	5.9	6.6	6.6
Fall 99 ECON 8202	5.7	6.2	6.1
Spring 00 APEC 5031	6.3	6.7	7.0
Fall 00 APEC 8211	6.7	6.8	6.7
Spring 01 APEC 5031	6.4	6.8	6.8
Fall 01 APEC 8211	6.2	6.4	6.3
Fall 01 APEC 8211	6.4	6.75	6.75
Fall 02 APEC 8211	6.3	6.4	6.75
Spring 03 APEC 5031	5.7	6.6	6.3
Fall 03 APEC 8211	6.3	6.6	6.5
Fall 04 APEC 5031	5.7	6.6	6.3
Fall 05 APEC 5031	6.3	6.8	6.8
Fall 05 APEC 8211	6.8	6.8	6.7
Fall 07 APEC 8801	7.0	7.0	7.0

**National Defense University / Industrial College of the Armed Forces  
Leadership Evaluations**

'Superb instructor of economics. Taught one section of fall macroeconomics course and two sections of spring microeconomics course. Rated extremely highly by students (100 % 'Strongly Agree/Agree) for quality of teaching and accomplishment of course objectives. Researched and wrote new draft curricula for the macroeconomics and microeconomics courses which drew on teaching materials used in leading MBA programs. These proposals will help the Economics Department improve the curricula in the future.'

-Dr. R. Stephen Brent, Department Chair

'Major asset to ICAF. Strong contributor to the Industry Study program. Expert industry analysis.'

-Dr. Alan G. Whittaker, Dean

'Major contributor to ICAF's educational excellence. Source of new ideas and approaches. Helped strengthen academic rigor.'

-Adm. Gerard M. Mauer, Jr., Commandant

## INVITED LECTURES

“Transportation Economics” (4 lectures) M.S. level course co-taught with Professor Moshe Ben-Akiva at Massachusetts Institute of Technology for November-December 2006.

“Defensive and Strategic Restructuring in US Class I Railroads”. Paper presented (by coauthor) at *4<sup>th</sup> Annual Conference on Railroad Industry Structure, Competition and Investment*. Madrid, Spain

“Welfare Tradeoffs in U.S. Rail Mergers.” Third Conference on Railroad Industry Structure, Competition and Investment. Stockholm, Sweden, October 21, 2005

“Subadditivity Tests for Network Separation.” Pennsylvania State University, Department of Civil Engineering. May 3, 2005.

“A Structural Econometric Model of U.S. Rail Markets,” Carlson School of Management, University of Minnesota, Marketing Seminar Series, April 15, 2005

“The Future of Transportation Economics,” Panel Presentation, Transportation Research Forum, Annual Meeting, Washington, D.C. March 7, 2005

“Econometric Analysis of Transportation Markets (3 Lectures)” University of the Social Sciences. Toulouse, FRANCE. February 21-28, 2004.

“Economics of Investment in the U.S. Freight Rail Network,” Annual Conference, Transportation Research Board, Washington, DC, January, 2004.

“Trucking Efficiency versus Transportation Efficiency: An Economic Evaluation of TRB Special Report 267.” Annual Meeting of the Council of Logistic Management, Chicago, IL, September 22, 2003.

“Coffee, TEA or What? Aspects of Intermodal Freight Policy.” James L. Oberstar Forum on Transportation Technology and Policy. University of Minnesota, Center for Transportation Studies, March 16, 2003

“Econometric Analysis of Transportation Markets (3 Lectures)” University of the Social Sciences. Toulouse, FRANCE. March 4-8, 2003.

“Trucking Efficiency versus Transportation Efficiency: An Economic Evaluation of TRB Special Report 267.” Annual Conference, Transportation Research Board, Washington, DC, January, 2003.

“Subadditivity Tests for Network Separation.” University of Illinois, Department of Civil Engineering. June 10, 2002.

“Subadditivity Tests for Network Separation.” Northwestern University, Transportation Center. April 4, 2002.

“The Social Costs of Freight Transportation.” Minnesota Agri-Growth Council, Conference on Transportation Needs. St. Paul, MN March 21, 2002.

“Econometric Analysis of Transportation Markets (3 Lectures)” University of the Social Sciences. Toulouse, FRANCE. January 21-25, 2001.

“Density and Integration Effects on U.S. Railroads.” International Conference on the Future of Rail Transportation. Paris, FRANCE. June 9, 2000.

“The Incidence of Transportation Costs in the Twin Cities Region,” Research Forum on Regional Growth, Humphrey Institute, March 15, 2000.

“Estimating the Full Social Costs of Transportation,” Research Forum on Regional Growth, Humphrey Institute. March 31, 1999

“Economic Aspects of Railroad Restructuring (with Jean Tirole),” Invited Seminar at Reseau Ferre de France. Paris, FRANCE. February 5, 1999.

“Economic Aspects of Railroad Restructuring,” Toulouse Seminar on Network Economics. University of the Social Sciences. Toulouse, FRANCE. January 29, 1999.

“Econometric Analysis of Transportation Markets (3 Lectures)” University of the Social Sciences. Toulouse, FRANCE. January 11-16, 1999.

“Transportation and Regional Growth,” CTS Forum, October 26, 1998

“Econometric Analysis of Transportation Markets (3 Lectures)” University of the Social Sciences. Toulouse, FRANCE. February 23-26, 1998.

“Econometric Analysis of Transportation Markets (4 Lectures)” Massachusetts Institute of Technology, Cambridge, MA. January 20-29, 1998.

“Amtrak Subsidies and Transportation Externalities.” Transportation Research Record National Conference on Passenger Rail. Washington, D.C. June 11, 1997.

“Regulation of Transportation Markets” (3 Lectures), University of the Social Sciences. Toulouse, FRANCE. February 17-20, 1997.

“Staggering Toward Efficiency: The Staggers Act of 1980 and the Intermodal Surface Transportation Efficiency Act,” CTS Annual Luncheon, Minneapolis, MN November 12, 1996.

## **GOVERNMENT TESTIMONY**

“Transportation and Regional Growth,” Testimony before Minnesota State Planning Commission, October 18, 2001

“Let the Polluters Pay: The Economics of Road Pricing,” Testimony before Minnesota State Senate Transportation Committee. St. Paul, MN. September 14, 2000

“Transportation and Regional Growth,” Presentation to Metropolitan Mayors’ Association, Office of the Mayor, Minneapolis, MN. February 13, 1998.

“Transportation and Regional Growth,” Testimony before Twin Cities Metropolitan Council Transportation Advisory Board. St. Paul, MN July 15, 1997.



“Transportation and Economic Growth,” Testimony before Joint Minnesota Senate-House Committee on Transportation, St. Paul, MN, January 15, 1997

“The Economic Contribution of Transportation Research,” Testimony before Minnesota State Senate Committee on Transportation, St. Paul, MN, January 9, 1997

## **CONSULTING EXPERIENCE**

Corporations: Battelle Institute, Burlington Northern  
Cessna, Die Bahn, Exxon,  
Reseau Ferre de France,  
RENFE, Union Pacific Railroad,  
United Parcel Service

Industry Groups: Air Transport Association of America  
Association of American Railroads

Government: U.S. Department of Transportation  
Minnesota Department of Transportation

Law Firms: Covington & Burling  
Schnader, Harrison, Segal & Lewis  
Akin, Gump, Strauss, Hauer & Feld