

CURRICULUM VITA

Gordon Fredrick Mulligan

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Information

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Date of Birth: November 4, 1947

Place of Birth: Vancouver, B.C., Canada

Citizenship: U.S., Canada

Education: University of British Columbia
Vancouver, B.C., Canada

B.Sc. (Mathematics) 1969
M.A. (Geography) 1972
Ph.D. (Geography) 1976

Major Fields

Economic Geography: spatial competition, spatial decision-making and behavior,
facility location, city-size models, spatial hedonics
Regional Development: community and regional impact models, shift-share
analysis, adjustment models, amenities
Demography: migration, population growth, crime

Employment

Professor, University of Arizona, 1989-
Associate Professor, University of Arizona, 1983-1989
Assistant Professor, University of Arizona, 1978-1983
Lecturer (visiting), Flinders University, Fall 1982
Assistant Professor (visiting), Queen's University, 1977-78
Assistant Professor (visiting), University of Washington, Fall 1976
Instructor, University of British Columbia, 1975-76

Honors and Awards

Central Mortgage and Housing Corporation Fellowship, 1970-74

UBC Fellowship, 1974

BPA College Summer Research Award, University of Arizona, 1979; proposal entitled, "The Equilibrium Size and Shape of Market Areas."

BPA College Summer Research Award, University of Arizona, 1980; proposal entitled, "Production Functions, Export Base Multipliers, and Urbanization Ratios in City Systems."

BPA College Summer Research Award, University of Arizona, 1981; proposal entitled, "Neglected Issues in Market Area Analysis."

National Science Foundation, Co-Principal Investigator with Lay James Gibson, Proposal Number SES-8112783; proposal entitled "Alternative Approaches to Estimating Cross- Sectional and Longitudinal Multipliers in Small Communities."

University of Arizona Foreign Travel Award, Summer 1982.

Flinders University Research Grant, 1982; proposal entitled "Minimum Requirements: The Australian Case."

National Research Council (IGU) Travel Grant, 1986.

National Research Council (IGU) Travel Grant, 1988.

Visiting Scholar, Simon Fraser University HarbourCentre Campus, Fall 1992.

Social and Behavioral Sciences Faculty Summer Research Award, University of Arizona, 1994

University of Arizona Foreign Travel Award, Summer 1996.

Fellowship, Udall Center for Public Policy Studies, University of Arizona, Fall 1996.

Social and Behavioral Sciences Citizen of the Year, University of Arizona, 2002

David Boyce Award for Service, North American Regional Science Council, 2002

University of Arizona Foreign Travel Award, Summer 2003

Reports

"Alternative Approaches to Estimating Cross-Sectional and Longitudinal Multipliers in Small Communities," NSF Final Project Report, July 1983, 84pp. (with Lay James Gibson).

Refereed Journal Articles

"City-Size Models and the Economic Base: A Recent Controversy," *Journal of Regional Science*, Volume 15, 1975, 1-8 (with John B. Parr and Kenneth G. Denike).

"Properties of a General Hierarchical City-Size Model," *Geographical Analysis*, Volume 8, 1976, 395-405.

"Additional Properties of a Hierarchical City-Size Model," *Journal of Regional Science*, Volume 19, 1979, 57-66.

"The Effects of Multiplier Shifts in a Hierarchical City-Size Model," *Regional Science and Urban Economics*, Volume 10, 1980, 77-90.

"Losch's Single Good Equilibrium," *Annals, Association of American Geographers*, Volume 71, 1981, 84-94.

"The Urbanization Ratio and the Rank-size Distribution: A Comment," *Journal of Regional Science*, Volume 21, 1981, 1283-1285.

"A Note on Hierarchical Income Flows," *Environment and Planning A*, Volume 13, 1981, 747-750.

"Production Functions, Export Base Multipliers, and Urbanization Ratios in City Systems," *Papers, Regional Science Association*, Volume 48, 1981, 77-88.

"Equilibrium Market Area Properties under Two Pricing Systems," *Geographical Analysis*, Volume 14, 1982, 51-63.

"Tinbergen-type Central Place Systems," *International Regional Science Review*, Volume 7, 1982, 83-91.

"Central Place Populations: A Microeconomic Consideration," *Journal of Regional Science*, Volume 23, 1983, 83-92.

"Consumer Demand and Multipurpose Shopping Behavior," *Geographical Analysis*, Volume 15, 1983, 76-81.

"The Theory of the Firm: Some Spatial Implications," *Urban Geography*, Volume 4, 1983, 156-172 (with Richard W. Reeves).

"Central Place Populations: Some Implications of Consumer Shopping Behavior," *Annals, Association of American Geographers*, Volume 74, 1984, 44-56.

"Agglomeration and Central Place Theory: A Review," *International Regional Science Review*, Volume 9, 1984, 1-42.

"Regression Estimates of Economic Base Multipliers for Small Communities," *Economic Geography*, Volume 60, 1984, 225-237 (with Lay James Gibson).

"A Note on Sectoral Multipliers in Small Communities," *Growth and Change*, Volume 15, 1984, 1-7 (with Lay James Gibson).

"A General Model for Estimating the Number of Tertiary Establishments in Communities: An Arizona Perspective," *The Social Science Journal*, Volume 22, 1985, 77-93 (with Marian L. Wallace and David A. Plane).

"Employment Data and the Classification of Urban Settlements," *The Professional Geographer*, Volume 38, 1986, 349-358 (with Richard W. Reeves).

"Employment Multipliers and Functional Types of Communities: Effects of Public Transfer Payments," *Growth and Change*, Volume 18, 1987, 1-11.

"Consumer Travel Behavior: Extensions of a Multipurpose Shopping Model,"

Geographical Analysis, Volume 19, 1987, 364-375.

"A General Model for Estimating Economic Base Multipliers," *The Australian Journal of Regional Studies*, Volume 3, 1988, 52-68.

"Price Variation in Spatial Oligopolies," *Geographical Analysis*, Volume 21, 1989, 32-46 (with Timothy J. Fik).

"Price Variation in Spatial Markets: The Case of Perfectly Inelastic Demand," *The Annals of Regional Science*, Volume 23, 1989, 187-201 (with Timothy J. Fik).

"Asymmetrical Price Conjectural Variation in Spatial Competition Models," *Economic Geography*, Volume 65, 1989, 19-32 (with Timothy J. Fik).

"Spatial Flows and Competing Central Places: Towards a General Theory of Hierarchical Interaction," *Environment and Planning A*, Volume 22, 1990, 527-549 (with Timothy J. Fik).

"Spatial Competition: A Network Approach," *Geographical Analysis*, Volume 23, 1991, 79-89 (with Timothy J. Fik).

"A Reply to 'A Note on "Price Variation in Spatial Markets: The Case of Perfectly Inelastic Demand"', " *The Annals of Regional Science*, Volume 25, 1991, 63-69, (with Timothy J. Fik).

"Sectoral-level Employment Multipliers in Small Urban Settlements: A Comparison of Five Models," *Urban Geography*, Volume 12, 1991, 240-259 (with Hak-Hoon Kim).

"Equality Measures and Facility Location," *Papers in Regional Science*, Volume 70, 1991, 345-365.

"Labor Migration amongst Hierarchically Competing and Intervening Origins and Destinations", *Environment and Planning A*, Volume 24, 1992, 1271-1290 (with Timothy J. Fik and Robert G. Amey).

"Multiplier Effects and Structural Change: Applying Economic Base Analysis to Small Economies," *Review of Urban and Regional Development Studies*, Volume 6, 1994, 3-21.

"Price and Location Conjectures in Medium- and Long-Run Spatial Competition Models," *Journal of Regional Science*, Volume 34, 1994, 179-198 (with Timothy J. Fik).

"Using Dummy Variables to Estimate Economic Base Multipliers," *The Professional Geographer*, Volume 46, 1994, 368-378 (with Timothy J. Fik).

"Consistent Price and Location Conjectures in Spatial Competition Models," *The Annals of Regional Science*, Volume 29, 1995, 91-109 (with Timothy J. Fik).

"Node-Hinterland Relations and Regional Economic Linkages in Florida: Some Planning Implications," *The Southeastern Geographer*, Volume 36, 1996, 11-31 (with Timothy J. Fik and Robert G. Amey).

"Myopic Spatial Competition: Boundary Effects and Network Solutions," *Papers in Regional Science*, Volume 75, 1996, 155-176.

"An Assessment of the Assignment Method in Economic Base Analysis," *The Review of Regional Studies*, Volume 26, 1996, 265-284 (with Alexander C. Vias).

"Interindustry Employment Requirements in Nonmetropolitan Communities," *Growth and Change*, Volume 27, 1996, 460-478 (with Alexander C. Vias).

"Behavior in Agricultural Markets under Environmental Uncertainty: A

Theoretical Approach based on Von Thunen's Framework," *Journal of the Korean Geographical Society*, Vol. 31, 1996, 648-661 (with Sang-Yool Lee).

"Disaggregate Economic Base Multipliers in Small Communities," *Environment and Planning A*, Volume 29, 1997, 955-1074 (with Alexander C. Vias).

"Measuring Spatial Focusing in a Migration System," *Demography*, Volume 34, 1997 251-262 (with David A. Plane).

"Functional Form and Spatial Interaction Models," *Environment and Planning A*, Volume 30, 1998, 1497-1507 (with Timothy J. Fik).

"Population and Employment Interactions in the Growth of U.S. Micropolitan Centers," *Urban Geography*, Volume 31, 1998, 632-656 (with Sonya M. Glavac and Alexander C. Vias).

"Initial Diagnostics of a Population-Employment Adjustment Model," *Environment and Planning A*, Volume 39, 1999, 632-656 (with Alexander C. Vias and Sonya M. Glavac).

"Integrating Economic Base Theory with Regional Adjustment Models: The Nonmetropolitan Rocky Mountain West," *Growth and Change*, Volume 30, 1999, 507-525 (with Alexander C. Vias).

"Resolving Location Conflict with Standardized Space-Cost Curves," *The Professional Geographer*, Volume 52, 2000, 50-60.

"Town Specialization and Occupation-Industry Employment Relationships," *The Review of Regional Studies*, Volume 30, 2000, 239-257.

"Economic Structure and Socioeconomic Change in America's Micropolitan Areas, 1970-1997," *The Social Science Journal*, Volume 39, 2002, 399-417 (with Alexander C. Vias and Andreas Molin).

"Housing Prices in Tucson, Arizona," *Urban Geography*, Volume 23, 2002, 446-470 (with Rachel Franklin and Adrian Esparza).

"Quality of Life in the U.S. States: 1970 and 2000," *Yearbook, Pacific Coast Geographers*, Volume 64, 2002, 73-97 (with Rachel Burke).

"Hedonic Estimates of Lodging rates in the Four Corners States," *The Professional Geographer*, Volume 54, 2002, 533-543 (with Patrick J. White).

"The Determinants of Crime in Tucson, Arizona," *Urban Geography*, Volume 24, 582-610, 2003 (with Meagan E. Cahill).

"What's wrong with Economic Geography? Other Thoughts on the Rift," *Canadian Journal of Regional Science*, Volume 26, 2003, pp. 33-35.

"Modeling Spatial Variation in Housing Prices: A Variable Interaction Approach," *Real Estate Economics*, Volume 31, 2003, 623-646 (with Timothy J. Fik and David Ling).

"Estimating Population Change with a Two-Category Shift-Share Model," *The Annals of Regional Science*, Volume 38, 2004, 113-130 (with Andreas Molin).

"Geographic Patterns in U.S. Urban Inflation, 1990-2000," *Yearbook, Pacific Coast Geographers*, Volume 66, 2004, 61-79 (with Andreas Molin).

"Population Growth in the World's Largest Cities," *Cities*, Vol. 22, No. 5, 2005, 365-380 (with Jason Crampton).

"Growth and Change in U.S. Micropolitan Areas," *Annals of Regional Science*,

forthcoming 2006 (with Alexander C. Vias).

"A Note on Localization and Specialization," *Growth and Change*, Vol. 36, 2005, 565-576 (with Charles Schmidt).

"Land Absorption in United States Metropolitan Areas: Estimates and Projections from Regional Adjustment Models," *Geographical Analysis*, forthcoming 2006 (with John Carruthers).

Other Journals

"The Functional Roles of Arizona Communities," *Arizona Review*, Vol. 33, 1985, 15-25 (with Richard W. Reeves).

Book Chapters

"Consistent Price Conjectures in One-Dimensional Markets," pp. 131-144 in *Structure and Change in the Space Economy* (Festschrift in Honor of Martin Beckmann), T. R. Lakshmanan and Peter Nijkamp (editors), Springer-Verlag, New York, 1993.

"Some Implications of Behaviour in Agricultural Markets," pp. 272-286 in *Recent Developments in Spatial Analysis*, Manfred Fischer and Arthur Getis (editors), Springer-Verlag, New York, 1997.

"Urban Quality of Life and Public Policy: A Survey," pp. 729-802 in *Urban Dynamics and Growth: Advances in Urban Economics*, Roberta Capello and Peter Nijkamp (editors), Elsevier, Amsterdam, 2004 (with John Carruthers and Meagan Cahill).

Selected Abstracts

"City-size Models and the Economic Base: A Recent Controversy," *Journal of Economic Literature*, Volume 13, 1975, 1247 (with J.B. Parr and K.G. Denike).

"Additional Properties of a Hierarchical City-size Model," *Journal of Economic Literature*, Volume 17, 1979, 1359.

"Central Place Populations: A Microeconomic Consideration," *Journal of Economic Literature*, Volume 21, 1983, 1401.

"Accounting for Qualitative Change in Economic Impacts," *Yearbook, Association of Pacific Coast Geographers*, Vol. 54, 1992, 171.

"Price and Location Conjectures in Medium- and Long-Run Spatial Competition Models," *The Survey of Regional Literature*, Volume 23, 1993, 39.

"Price and Location Conjectures in Medium- and Long-Run Spatial Competition Models," *Journal of Economic Literature*, Volume 32, 1994, 2316.

"Myopic Spatial Competition: Boundary Effects and Network Solutions," *Location Science*, Volume 5, 1998.

"Multiplier Estimates in Small Towns: Adjusting for Impacts," *Yearbook, Association of Pacific Coast Geographers*, Vol. 61, 1999, 243.

"Quality of Life in the U.S. States, 1970-2000," *Yearbook, Association of*

Pacific Coast Geographers, Vol. 64, 2002, 184-185.

"Shift-Share Analysis of Southwestern Towns, 1980-1990," *Yearbook, Association of Pacific Coast Geographers*, Vol. 64, 2002, 205-206.

"Geographic Patterns in U.S. Urban Inflation: 1990-2000," *Yearbook, Association of Pacific Coast Geographers*, Vol. 66, 2004, 197-198.

"Recent Population Growth in the World's Largest Cities," *Yearbook, Association of Pacific Coast Geographers*, Vol. 67, 2005, 160.

Book Reviews

Leonard J. Evenden (ed.), **Vancouver: Western Metropolis** (University of Victoria, 1978) for *The Annals of Regional Science*, Volume 14, 1980, 152-155.

Walter Isard and Panagis Liossatos, **Spatial Dynamics and Optimal Space-Time Development** (North-Holland Publishing Company, 1979) for *Growth and Change*, Volume 12, Number 2, 1981, 56-57.

Robert J. Newman, **Growth in the American South** (New York University Press, 1984), for *Economic Geography*, Volume 62, Number 1, 1986, 98-99.

Peter Nijkamp (editor), **Handbook of Regional and Urban Economics, Volume I: Regional Economics** (North-Holland, 1986), for *The Annals of Regional Science*, Volume 22, Number 2, 1988, 115-119.

Edwin S. Mills (editor), **Handbook of Regional and Urban Economics, Volume II: Urban Economics** (North-Holland, 1987), for *The Annals of Regional Science*, Volume 23, Number 3, 1989, 241-245.

Robert E. Kuenne, **The Economics of Oligopolistic Competition: Price and Nonprice Rivalry, Collected Papers of Robert E. Kuenne** (Blackwell, 1992), for *Journal of Regional Science*, Volume 33, Number 1, 1993, 99-102.

Michael Batty and Paul Longley, **Fractal Cities: A Geometry of Form and Function**, (Academic Press, 1994), for *Cities*, Volume 14, Number 1, 1996, 54-55.

Peter Droege (editor), **Intelligent Environments: Spatial Aspects of the Information Revolution** (Elsevier Science, 1997) for *Cities*, Volume 15, 313-314.

Scott Orford, **Valuing the Built Environment: GIS and House Price Analysis** (Ashgate, 1999) for *Journal of Regional Science*, 2001, Volume 41, 363-366.

A. Stewart Fotheringham, Chris Brunson, and Martin Charlton, **Quantitative Geography: Perspectives on Spatial Data Analysis** (Sage, 2000) for *Journal of Regional Science*, 2001, Volume 41, 549-553.

Wilber Maki and Richard Lichty, **Urban Regional Economics: Concepts, Tools, Applications** (Iowa State University, 2000), for *American Journal of Agricultural Economics*, 2002, Volume 84, 533-536.

Martin Beckmann, **Location Theory** (Random House, 1968) for 50th Anniversary Volume of the *Papers in Regional Science*, 2003, Volume 83, 80-82.

Tonu Puu, **Mathematical Location and Land Use: An Introduction** (Springer-Verlag, 2003), for *Papers in Regional Science*, 2004, Volume 83, 733-735.

Discussion Papers

Department of Geography and Regional Development, University of Arizona

"A Microeconomic Approach to Understanding Central Place Theory," Paper 81-3, 19 pp. (with Richard W. Reeves).

"Production Functions, Export Base Multipliers, and Urbanization Ratios in City Systems," Paper 81-12, 11 pp.

"The Theory of the Household: Some Spatial Implications," Paper 81-33, 19 pp.

"Central Place Models: Some Demand Issues," Paper 81-36, 15 pp.

"Central Place Populations and Multipurpose Shopping Behavior," Paper 82-1, 31 pp.

"Agglomeration and Central Place Theory: A Review," Paper 82-5, 51 pp.

"Multiplier Estimates for Small Communities," Paper 82-14, 15 pp.

"The Economic Base Multiplier: Alternative Estimating Strategies," Paper 83-4, 33 pp., (with Lay J. Gibson).

"Regression Estimates of Sectoral Multipliers," Paper 83-5, 16 pp. (with Lay J. Gibson).

"Multiplication Rates of Establishments: A New Estimating Procedure," Paper 83-6, 17 pp. (with Marian L. Wallace and David A. Plane).

"A General OLS Regression Model for Estimating Economic Base Multipliers," Paper 84-3, 25 pp.

"The Functional Roles of Arizona Communities," Paper 84-6, 20 pp. (with Richard W. Reeves).

"The Use of Employment Data in Settlement Classification," Paper 84-8, 24 pp. (with Richard W. Reeves).

"Relationships Between Economic Base Multipliers and the Functional Types of Communities," Paper 85-3, 25 pp.

"Urbanization Models and City Systems," Paper 86-8, 21 pp.

"Multipliers, Transfer Payments and Functional Types: More Results of the Arizona Community Data Set," Paper 86-9, 16 pp.

"Consumer Travel Behavior: Extensions of a Multipurpose Shopping Model," Paper 86-11, 22 pp.

"Pricing Variation in One-Dimensional Markets: Inelastic Demand," Paper 87-10, 26 pp.

"Price Reaction Functions: A Conceptual Framework for Spatial Competition," Paper 88-2, 20 pp.

"Price Patterns in Spatial Markets," Paper 88-5, 42 pp. (with Timothy J. Fik).

"Price Variation in Spatial Markets: The Case of Inelastic Demand," Paper 88-9, 18 pp. (with Timothy J. Fik).

"Spatial Flows and Competing Central Places: Toward a General Theory of Hierarchical Interaction," Paper 88-10, 45 pp. (with Timothy J. Fik).

"Asymmetrical Price Conjectural Variation in Spatial Competition Models," Paper

88-11, 37 pp. (with Timothy J. Fik).

"Spatial Competition: A Network Approach," Paper 89-4, 23 pp. (with Timothy J. Fik).

"Sectoral-level Employment Multipliers in Small Urban Settlements: A Comparison of Five Models," Paper 90-1, 29 pp. (with Hak-Hoon Kim).

"Equality Measures and Facility Location," Paper 90-2, 32 pp.

"Consistent Price Conjectures in One-Dimensional Markets," Paper 91-2, 21 pp.

"Price and Location Conjectures in Spatial Competition Models," Paper 91-3, 31 pp. (with Timothy J. Fik).

"Big Impacts in Small Economies: Adjusting Multiplier Effects for Structural Changes," Paper 92-5, 38 pp.

"Using Dummy Variables to Estimate Economic Base Multipliers," Paper 93-3, 32 pp. (with Timothy J. Fik).

"Consistent Price and Location Conjectures in Spatial Competition Models," Paper 93-4, 32 pp. (with Timothy J. Fik).

"An Alternative Spatial Competition Model," Paper 94-2, 47 pp.

"Disaggregating Economic Base Multipliers in Arizona Communities," Paper 95-1, 46 pp. (with Alexander C. Vias).

"Interindustry Employment Requirements in Nonmetropolitan Communities," Paper 95-2, 25 pp. (with Alexander C. Vias).

"Estimating the Economic Base Multiplier: An Assessment of the Assignment Method," Paper 96-1, 36 pp. (with Alexander C. Vias).

"Some Implications of Behaviour in Agricultural Markets," Paper 96-6, 24 pp.

"Behaviour in Agricultural Markets under Environmental Uncertainty: A Theoretical Approach based on Von Thunen's Framework," Paper 96-7, 43 pp. (with Sang-Yool Lee).

"A Typology of Economic Growth in Nonmetropolitan Counties in the U.S.," Paper 96-8, 41 pp. (with Alexander C. Vias).

"Initial Diagnostics of a Population-Employment Adjustment Model," Paper 97-2, 40 pp. (with Alexander C. Vias and Sonya Glavac).

"Population and Employment Change in U.S. Micropolitan Centers," Paper 97-6, 44 pp. (with Sonya Glavac and Alexander C. Vias).

"Resolving Location Conflict with Standardized Space-Cost Curves," Paper 98-3, 15 pp.

"Occupation-Industry Employment Relationships in Small Towns," Paper 00-1, 22 pp.

"Town Specialization and Occupation-Industry Employment Relationships," Paper 00-2, 20 pp.

"Change in America's Micropolitan Areas, 1970-1977," Paper 00-3, 35 pp. (with Alexander C. Vias and Andreas Molin).

"Estimating Hotel Room Rates with Hedonic Analysis," Paper 01-1, 41 pp. (with

Patrick J. White).

"The Geography of Violent Crime in Tucson, Arizona," Paper 01-2, 35 pp. (with Meagan Cahill).

Papers Presented at Professional Meetings

"The Loschian Equilibrium: A Reconsideration of the Mills and Lav Contribution," Annual Meeting of the Western Regional Science Association, Monterey, California, February 1980.

"Some Properties of Tinbergen's City-size Model," Annual Meeting of the Association of American Geographers, Louisville, Kentucky, April 1980.

"Production Functions, Export Base Multipliers, and Urbanization Ratios in City Systems," Annual North American Meeting of the Regional Science Association, Milwaukee, Wisconsin, November 1980.

"Equilibrium Market Area Properties Under Uniform Delivered Pricing and Mill Pricing," Annual Meeting of the Western Regional Science Association, Newport Beach, California, February 1981.

"Central Place Models: Some Demand Issues," Annual North American Meeting of the Regional Science Association, Montreal, Canada, November 1981.

"The Theory of the Household: Some Spatial Implications," Annual Meeting of the Western Regional Science Association, Santa Barbara, California, February 1982.

"Multiplier Estimates for Small Communities," Annual Conference of the Regional Science Association (Australia and New Zealand Section), Canberra, Australia, December 1982.

"Some Effects of Consumer Travel Behavior on the Sizes of Central Places," Annual Meeting of the Western Regional Science Association, Honolulu, Hawaii, February 1983.

"Regression Estimates of Sectoral Multipliers," Annual Meeting of the Western Regional Science Association, Monterey, California, February 1984 (with Lay J. Gibson).

"Multiplication Rates of Establishments: A New Estimating Procedure," Annual Meeting of the Arizona-Nevada Academy of Science, Tucson, Arizona, April 1984 (with Marian L. Wallace and David A. Plane).

"Urbanization Models and City Systems," Annual Meeting of the Association of American Geographers, Minneapolis, Minnesota, May 1986.

"Consumer Travel Behavior: Some Implications of Multipurpose Shopping," International Geographical Union Mathematical Models Working Group, Madrid, Spain, August 1986.

"Price Patterns in Spatial Markets," Annual Meeting of the Association of American Geographers, Phoenix, Arizona, April 1988 (with Timothy J. Fik).

"Price Variation in One-Dimensional Markets: The Case of Inelastic Demand," International Geographical Union Mathematical Models Working Group, Canberra, Australia, August 1988.

"Asymmetrical Price Conjectural Variation in Spatial Competition Models," Annual Meeting of the Western Regional Science Association, San Diego, California, February 1989 (with Timothy J. Fik).

"Modeling Hierarchical Flows: Towards a General Theory of Spatial Interaction," Annual Meeting of the Western Regional Science Association, San Diego, California, February 1989 (with Timothy J. Fik).

"Spatial Price Competition under Mixed Conjectures," Annual Meeting of the Association of American Geographers, Baltimore, Maryland, March 1989 (with Timothy J. Fik).

"Economic Base Multipliers in Southwestern Communities," Annual Meeting of the Association of Pacific Coast Geographers, Fairbanks, Alaska, September 1989.

"Spatial Competition: A Network Approach," Annual Meeting of the Western Regional Science Association, Molokai, Hawaii, February 1990 (with Timothy J. Fik).

"Price Competition and Location: Some Empirical Findings," Annual Meeting of the Association of American Geographers, Toronto, Ontario, April 1990 (with Timothy J. Fik).

"Sectoral and Functional Variations of Economic Base Multipliers," Annual Meeting of the Association of American Geographers, Toronto, Ontario, April 1990 (with Hak-Hoon Kim).

"Equality Measures and Facility Location," Annual Meeting of the North American Regional Science Association, Boston, Massachusetts, November 1991.

"Modeling U.S. Labor Migration: Some Preliminary Findings," Annual Meeting of the Association of American Geographers, Miami, Florida, April 1991 (with Timothy J. Fik and Robert Amey).

"Accounting for Qualitative Change in Economic Impacts," Annual Meeting of the Association of Pacific Coast Geographers, Tucson, Arizona, September 1991.

"Price and Location Conjectures in Spatial Competition Models," Annual Meeting of the North American Regional Science Association, New Orleans, Louisiana, November 1991 (with Timothy J. Fik).

"Regional Change and the Florida Economy," Annual Meeting of the Association of American Geographers, San Diego, California, April 1992 (with Timothy J. Fik and Robert G. Amey).

"Price and Location Conjectures in Medium- and Long-Run Spatial Competition Models," Annual Meeting of the Western Regional Science Association, Wailea, Hawaii, February 1993 (with Timothy J. Fik).

"Multiplier Effects and Structural Shifts in Impact Models," Annual Meeting of the Pacific Regional Science Conference Organization, Whistler, Canada, July 1993.

"Consistent Price and Location Conjectures in Spatial Competition Models," Annual North American Meetings of the Regional Science Association International, Houston, Texas, November 1993.

"Using Dummy Variables to Estimate Economic Base Multipliers," Annual Meeting of the Western Regional Science Association, Tucson, Arizona, February 1994 (with Timothy J. Fik).

"Measuring Spatial Focusing in a Migration System," Annual Meeting of the Association of American Geographers, San Francisco, California, April 1994 (with David A. Plane).

"Recent Advances in Spatial Competition Models," Annual North American Meetings of the Regional Science Association International, Niagara Falls, Canada,

November 1994.

"Disaggregating Economic Base Multipliers in Arizona Communities," Annual Meeting of the Western Regional Science Association, San Diego, California, February 1995 (with Alexander C. Vias).

"Interindustry Employment Requirements in Nonmetropolitan Communities," Annual Meeting of the Western Regional Science Association, Napa, California, February 1996 (with Alexander C. Vias).

"Estimating the Economic Base Multiplier: An Assessment of the Assignment Method," Annual Meeting of the Western Regional Science Association, Napa, California, February 1996 (with Alexander C. Vias).

"Some Implications of Behaviour in Agricultural Markets," International Geographical Union Mathematical Models Commission, the Hague, Netherlands, August 1996.

"A Typology of Economic Growth in Nonmetropolitan Counties in the U.S.," Annual North American Meetings of the Regional Science Association International, Arlington, Virginia, November 1996 (with Alexander C. Vias).

"Population and Employment Change in Micropolitan Centers," Annual North American Meetings of the Regional Science Association International, Arlington, Virginia, November 1996 (with Sonya Glavac).

"Some Implications of Behavior in Agricultural Markets," Annual Meeting of the Western Regional Science Association, Waikaloa, Hawaii, February 1997.

"Interindustry Employment Requirements in Southwestern Communities," Annual Applied Geography Conference, Albuquerque, New Mexico, November 1997.

"Population and Employment Growth in Micropolitan Centers in the 1980s," Annual Applied Geography Conference, Albuquerque, New Mexico, November 1997 (with Sonya Glavac).

"Initial Diagnostics of a Population-Employment Adjustment Model," Annual Meeting of the Western Regional Science Association, Monterey, California, February 1998.

"Multiplier Estimates in Small Towns: Adjusting for Impacts," Annual Meeting of the Association of Pacific Coast Geographers, Flagstaff, Arizona, October 1998.

"Integrating Economic Base Theory with Regional Adjustment Models: An Example Analyzing Growth in the Nonmetropolitan Rocky Mountain West," Annual North American Meetings of the Regional Science Association International, Santa Fe, New Mexico, November 1998 (with Alexander C. Vias).

"Predicting the Ratio of List prices to Selling Prices in a Southwestern Housing Market," Annual North American Meetings of the Regional Science Association International, Montreal, Canada, November 1999 (with Rachel Martin, Adrian Esparza, Brigitte Waldorf).

"Economic Structure and Socioeconomic Change," Annual North American Meeting of the Regional Science Association International, Chicago, Illinois, November 2000 (with Alex Vias and Andreas Molin).

"Relationships between Occupation Employment and Industry Employment in Southwestern Towns," Annual Meeting of the Association of American Geographers, New York, New York, March 2001.

"Quality of Life Changes in the U.S. States, 1970-2000," Annual Meeting of the Association of Pacific Coast Geographers, Santa Barbara, CA, September 2001

(with Rachel Burke).

"Shift-Share Analysis of Southwestern Towns, 1980-1990," Annual Meeting of the Association of Pacific Coast Geographers, Santa Barbara, CA, September 2001 (with Andreas Molin).

"Modeling Spatial Variation in Housing Prices: A Variable Interaction Approach," Annual Meeting of the Western Regional Science Association, Rio Rico, AZ, February 2003 (with Timothy Fik and David Ling).

"Estimating Small-Area Population Change with a Two-Category Shift-Share Model," Annual Meeting of the RSAI, British-Irish Section, St. Andrews, Scotland, August 2003 (with Andreas Molin).

"Geographic Patterns of U.S. Urban Inflation: 1990-2000," Annual Meetings of the Association of Pacific Coast Geographers, Portland, OR, September 2003 (with Andreas Molin).

"Economic Growth and Land Absorption in United States Metropolitan Areas, 1987-1997," Annual Meetings of the North American Regional Science Council, Philadelphia, PA, November 2003 (with John I. Carruthers).

"Growth and Change in U.S. Micropolitan Areas," Annual Meeting of the RSAI, British-Irish Section, Cork, Ireland, August 2004 (with Alex Vias).

"Recent Population Growth in the World's Largest Cities," , Annual Meetings of the Association of Pacific Coast Geographers, San Luis Obispo, September 2004 (with Jason Crampton).

"Human Capital, Quality of Life, and the Adjustment Process in American Metropolitan Areas, Annual North American Meeting of the Regional Science Association International, Seattle, WA, November 2004 (with John I. Carruthers).

"Some Thoughts on Localization and Specialization," Annual Meeting of the Western Regional Science Association, San Diego, CA, February 2005 (with Charles Schmidt).

"Diagnostics on a Land Use Based Regional Adjustment Model," Annual Meeting of the Western Regional Science Association, San Diego, CA, February 2005 (with John I. Carruthers).

"Incorporating Spatially Weighted Regression Techniques to Model Variation in the Price of Housing Attributes," Annual Meeting of the American real Estate Society, Santa Fe, NM, April 2005 (with Christopher Bitter).

"The Demand for Land in U.S. Metropolitan Areas," Annual Meeting of the RSAI, British-Irish Section, Stratford-on-Avon, England, August 2005 (with John I. Carruthers).

"Alternative Equilibriums: Human Capital, Quality of Life, and the Adjustment Process in American Metropolitan Areas," Annual Meeting of the European Regional Science Association, Amsterdam, Netherlands, August 2005.

Papers Presented at Special Meetings

"Agglomeration and Central Place Theory: An Introductory Report," Agglomeration in Space Meeting, Habay-la-Neuve, Belgium, May 1982.

"Central Place Populations and Multipurpose Shopping Behavior," Agglomeration in Space Meeting, Habay-la-Neuve, Belgium, May 1982.

"A General OLS Regression Model for Estimating Economic Base Multipliers," Seminar Workshop on Regional Impacts of Population and Structural Change in U.S.A. and Australia, Palm Springs, California, June 1984.

"Some Thoughts on the State of Theory in Economic Geography," Analytical Economic Geography Workshop, held in conjunction with the Annual Meeting of the Association of American Geographers, Baltimore, Maryland, March 1989.

"Initial Diagnostics of a Regional Adjustment Model," Conference on Analytical Geography and Regional Change, Storrs, Connecticut, March 1998.

"Housing Prices in a Southwestern U.S. City: Evidence from Tucson, Arizona," 12th International Symposium (sponsored by the PRSCO Secretariat) on Spatial Interaction, Regeneration and Sustainability, Tokyo, Japan, October 2000 (with Adrian Esparza and Rachel Franklin).

"Town Specialization and the Relationships between Occupation Employment and Industry Employment," 13th International Symposium (sponsored by the PRSCO Secretariat), Kyoto, Japan, October 2001.

Panel Discussions

"Is There a Core Set of Topics in Undergraduate 'Regional' Courses: Should There Be?" Annual North American Meetings of the Regional Science Association International, Cincinnati, Ohio, November 1995.

"Meeting the Editors," Annual North American Meetings of the Regional Science Association International, Arlington, Virginia, November 1996.

Invited Lectures/Seminars

"Structure and Process in Central Place Systems," University of Washington, Seattle, October 1976.

"Properties of City Systems," Queen's University, Kingston, January 1978.

"City Systems: Theory and Practice," University of Arizona, Tucson, April 1978.

"Agglomeration in City Systems: Some Insights from Central Place Theory," University of Glasgow, Glasgow, May 1982.

"Central Place Populations and Consumer Behaviour," University of Bristol, Bristol, June 1982.

"Central Place Systems: A Theoretical Analysis," Commonwealth Scientific and Industrial Research Organization, Melbourne, August 1982.

"Shopping Behavior and the Sizes of Central Places," University of New South Wales, Sydney, October 1982.

"The U.S. Sunbelt Migration," Royal Geographical Society of Australasia (S. Australia Branch), Adelaide, October 1982.

"City-Size Models: The Contribution of Central Place Theory," Flinders University, Adelaide, November 1982.

"Multiplier Effects in Small Communities," University of British Columbia, Vancouver, January 1983.

"Multipurpose Shopping and Central Place Size," University of British Columbia, Vancouver, January 1983.

"Estimating Employment Multipliers in Arizona Towns," Arizona State University, Tempe, November 1986.

"The Arizona Community Data Set: Multipliers, Functional Types, and Transfer Payments," Simon Fraser University, Vancouver, May 1987.

"Price Competition in Spatial Markets," State University of New York at Buffalo, Buffalo, November 1988.

"Recent Changes in the Canadian Economy," Central Arizona College, Coolidge, April 1990.

"Recent Advances in Research on Spatial Competition," Queen's University, Kingston, April 1990.

"Equality in Facility Location," San Diego State University, San Diego, April 1991.

"Big Impacts in Small Economies: Is Traditional Multiplier Analysis of any Use?" University of Florida, Gainesville, November 1991.

"Spatial Competition Models," University of California, Santa Barbara, January 1994.

"Spatial Competition," Iowa State University, Ames, March 1995.

"Regional Agricultural Markets: Theory and Empirical Evidence," Arizona State University, Tempe, April 1995.

"Resolving Efficiency and Equality Conflict in Facility Location," University of Toledo, Toledo, March 2000.

"Using Space-Cost Curves in Facility Location Analysis," University of Connecticut, Storrs, February 2001.

"Quality of Life in the U.S. States," U.S. Air Force Academy, Colorado Springs, November 2002.

"Housing Prices in Tucson, Arizona," U.S. Air Force Academy, Colorado Springs, November 2002.

University of Arizona Colloquia/Workshops/Seminars

"A Circular and Cumulative Interpretation of City Growth," March 1979.

"The Theory of the Household: A Spatial Interpretation," September 1981.

"Multiplier Estimates for Southwestern Communities," November 1983.

"Multiplier Estimates in Arizona Communities," September 1985.

Departmental Research in Progress (DRIPS), February 1992.

Departmental Research in Progress (DRIPS), January 1995.

Seminar, Udall Center, November 1996.

Colloquium, Department of Resource and Agricultural Economics, February 2002

Professional Activities

Journal Editor

Coeditor, Journal of Regional Science, 1994-2002
Senior Editor, Journal of Regional Science, 2002-
Book Review Editor, The Annals of Regional Science, 1985-1988

Editorial Board

Journal of Regional Science, 1988-1994
The Annals of Regional Science, 1988-
Papers in Regional Science, 1990-1997
Growth and Change, 1993-
Geographical Analysis, 2004-
Journal of the Japan Section of the RSAI, 2005-2007

Journal Referee

The Social Science Journal, 1979-
Regional Science and Urban Economics, 1979-
International Regional Science Review, 1980-
Annals, Association of American Geographers, 1981-
Advances in Archaeological Method and Theory, 1981-
Journal of Regional Science, 1982-
Geographical Analysis, 1982-
Papers, Regional Science Association, 1983-1990
The Annals of Regional Science, 1985-
Growth and Change, 1985-
Environment and Planning A, 1986-
Economic Geography, 1986-
The Professional Geographer, 1986-
Regional Studies, 1987-
Urban Geography, 1987-
Progress in Human Geography, 1988-
Canadian Journal of Regional Science, 1989-
Transactions, Institute of British Geographers, 1989-
Geografiska Annaler, 1990-
Papers in Regional Science, 1991-
American Economist, 1991-
Location Science, 1992-
Ontario Geography, 1992-
Applied Geographic Studies 1997-
Cities, 1997-
Geographical and Environmental Modelling, 1998-
Journal of Geographical Systems, 1998-
International Economic Review, 2000-
Annals of Operations Research, 2002-
Environment and Planning C, 2002-
Urban Studies, 2003-
Regional Studies, 2004-
Environment and Planning B, 2005-

Grant-Proposal Reviews

National Science Foundation, Applied Research/Federal Regulations, 1985-
National Science Foundation, Geography and Regional Science, 1985-
National Science Foundation, Decision, Risk, and Management Science, 1991-
National Science Foundation, Economics, 1992-
National Science Foundation, International Research Fellows, 1997-
Social Sciences and Humanities Research Council of Canada, 1991-
Idaho State Board of Education, 1991
UPS-SOLA Dissertation Award, 1999
European Science Foundation, 2002-

Other Conference Participation

Applied Geography Conference; Chairperson, Session Organizer (1997).
Arizona-Nevada Academy of Science; Chairperson (1984).
Association of American Geographers; Chairperson (1981, 1998).
European Regional Science Association; Chairperson (1999)
North American Regional Science Council (NARSC): Session Organizer (1981),
Chairperson, Discussant (numerous times since 1981).
North American Regional Science Council; Councillor-at-Large (1999-2002),
Chair, NARSC Council (2000).
Population Association of America; Discussant (1988).
Pacific Regional Science Conference Organization; Chairperson, Discussant
(since 1993)
Southern Regional Science Association; Chairperson, Discussant (since 1998).
Western Regional Science Association; Program Committee, Session Organizer,
Chairperson, Discussant (numerous times since 1980).
Western Social Science Association, Chairperson (1979)
IGU Mathematical Models Working Group; Chairperson (Madrid, 1986; Canberra,
1988).
Canadian-Australian Workshop on Industrial Systems; Discussant (Vancouver,
1986).

University Service

College of Business and Public Administration Research Committee, 1981-82
Graduate College Representative, 1983-85, 1990-95.
Department Head, 1985-90
Search Committee, Dean of Architecture, 1985-87
Search Committee, Dean of Social and Behavioral Sciences, 1986-87
Search Committee, Head of Oriental Studies, 1986-87
Search Committee, Head of Geography and Regional Development, 2001-2002
Organizing Committee, Udall Center for Studies in Public Policy, 1987-1993
Search Committee, Director of Udall Center, 1987-88
Steering Committee, Drachman Institute for Land and Regional Development
Studies, 1989-1991
Search Committee, Director of Drachman Institute, 1989-90
Co-chair, Interdisciplinary Planning Committee, 1989-91
Faculty of Social and Behavioral Sciences Advisory Board, 1994-2002
Acting Department Head, 1997-98
Program Review, Drachman Institute, Spring 2000

Prominent Student Awards

Timothy Fik; winner of Tiebout graduate student award from WRSA, 1987
Alexander Vias; winner of Tiebout graduate student award from WRSA, 1998;
winner of Centennial graduate award from University of Arizona (outstanding
minority), 1998
Wende Julien; winner of Truman undergraduate award for State of Arizona
(outstanding undergraduate in state), 1997
Meagan Cahill; winner of Institutes of Justice fellowship, 2003
Aaron Okin; winner of Honors undergraduate research award from University of
Arizona, 2004
Brett Berry; chosen as outstanding undergraduate student in College of Social
and Behavioral Sciences, 2005