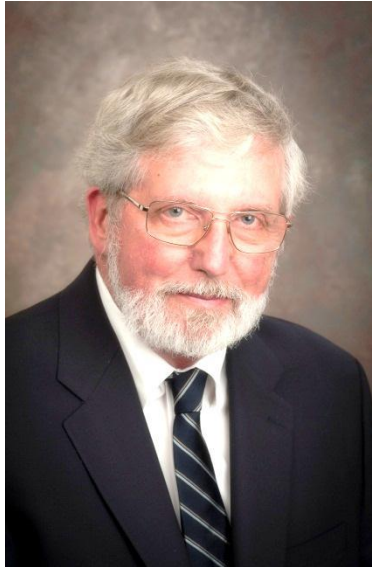January, 2024

William V. Gehrlein

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Education

Ph.D. Business Administration, The Pennsylvania State University, 1975. Thesis: "On Methods Which Induce Information from Partial Information Sets."

M.S. Physics, The Pennsylvania State University, 1972. Paper: "The Membrane Conductance Control Mechanism in Nerve Conduction."

B.S. Physics, Gannon College, Erie, Pennsylvania, 1968

Work Experience

2013- Professor Emeritus of Business Administration at University of Delaware. Conducting research into voting models and election procedures.

1981- Professor of Business Administration at University of Delaware. Teaching in areas of Production-Operations Management and Quantitative Methods. Served as Acting Chairperson 1987-88

1978- Associate Professor of Business Administration at University of Delaware. Teaching in areas of Production-Operations Management and Quantitative Methods. Worked half time in research under a National Science Foundation Grant.

1977- Assistant Professor of Management at Clarkson College. Teaching in areas of Production-Operations Management and Quantitative Methods. Worked half time in research under a National Science Foundation Grant.

1975- Post-Doctoral Fellow at Penn State University. Worked with Peter C. Fishburn under a National Science Foundation Grant.

1968- Physical Science Research Assistant. Conducted research in high velocity ballistics while serving in the U.S. Army at Frankford Arsenal, Philadelphia, PA.

Other Background

Research Interests: Preference and Decision Theory, Production-Operations Management, Social Choice Theory and Statistics

Professional Memberships: INFORMS, Decision Sciences Institute, and the International Society for Social Choice and Welfare

Academic Honors

Member of the Journal Editorial Board of International Journal of Multiple Criteria Decision Making.

Served as a member of the Journal Editorial Board of Social Choice and Welfare, an international journal in the area of social choice, voting models and welfare economics.

Served as a member of the Board of Associate Editors for Institute of Industrial Engineers (IIE) Transactions.

Served on the Board of Directors of Northeast Decision Sciences Institute.

Elected to full membership in the Operations Research Society of America.

Selected as a member of the Executive Council of the International Society for Social Choice and Welfare.

Fellow of the University of Delaware Center for Advanced Study 1988-89.

Consulting Experience

Have had major consulting contracts for a number of clients. The bulk of this work has been for the Marketing Communications Department (Marketing Research Division) of E.I. DuPont de Nemours, Inc. Other major clients have included the Solar Energy Research Institute, Management Horizons, and the Point of Purchase Advertising Institute.

Journal Articles

Operations Management and Related Business Topics:

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"Balancing Single Model Assembly Lines: Comments on a Paper by E. M. Dar-El," (with James H. Patterson), AIIE Transactions, Volume 10, 1978, 109-112.

"The Optimal Depreciation Policy for a Regulated Firm," (with Thomas K. Tiemann), The Engineering Economist, Volume 25, No. 2, 1980, 79-89.

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"Cyclical Variability of Bond Risk Premia: A Note," (with Thomas H. McInish), Journal of Banking and Finance, Volume 9, 1985, 157-165.

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"A Two-Stage Least Cost Credit Scoring Model," (With Bret Wagner), Annals of Operations Research, Volume 74, 1997, 159-171.

"Decision Rules for the Academy Awards Versus those for Elections," (with Hemant Kher), Interfaces, Volume 34, 2004, 226-234.

"Centroid: A Widely Misunderstood Concept in Facility Location," (with Mugdim Pasic), International Journal of Industrial Engineering, Volume 16, 2009, 99-107.

Preference and Utility Theory:

"Alternative Methods of Constructing Strict Weak Orders from Interval Orders," (with Peter C. Fishburn), Psychometrika, December 1974, 501-516.

"A Comparative Analysis of Methods for Constructing Weak Orders from Partial Orders," (with Peter C. Fishburn), Journal of Mathematical Sociology, Volume 4, 1975, 93-102.

"Information Overload in Mechanical Processes," (with Peter C. Fishburn), Management Science, December 1976, 391-398.

"An Analysis of Counting Methods for Ordering Incomplete Ordinal Data," (with Peter C. Fishburn), Theory and Decision, Volume 8, 1977, 209-227.

"Inducing Relations on Interval Ordered Data From Pairwise Comparisons," Quality and Quantity, Volume 14, 1980, 327-342.

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"The Expected Likelihood of Transitivity with a Probabilistic Chooser," Annals of Operations Research, Volume 23, 1990, 235-246.

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"Coincidence of Agreement between Probabilistic and Algebraic Choosers," Quality and Quantity, Volume 41, 2007, 461-487.

Mathematics and Statistics:

"Win Probabilities and Simple Majorities in Probabilistic Voting Situations," (with Peter C. Fishburn), Mathematical Programming, Volume 11, 1976, 28-41.

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"Robustness of Positional Scoring Rules Over Subsets of Alternatives," (with Peter C. Fishburn), Applied Mathematics and Optimization, Volume 6, 1980, 241-255.

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"The Three-Permutations Problem," (with Peter C. Fishburn), Discrete Mathematics, Volume 79, 1990, 259-264.

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"On the Probability of Observing Borda's Paradox," (with Dominique Lepelley), Social Choice and Welfare, Volume 35, 2010, 1-23.

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"The Optimal Depreciation Period for a Regulated Firm," (with Thomas K. Tiemann). Presented at National DSI Meeting, November 1979, New Orleans, 1:85-87.

"Estimation of Reciprocal Functions With Linear Programming," (with Edward T. Reutzel). Presented at National DSI Meeting, November 1979, New Orleans, 2:59-61.

"Optimal Policies of Wildlife Management," (with Erwin M. Saniga). Presented at National DSI Meeting, November 1979, New Orleans, Louisiana, 2:35-37.

"Long Waves in Economic Series: Some New Evidence." Presented at Southeast DSI Meeting, February 1980, Orlando, Florida, 231-233.

"Scoring Rule Sensitivity to Weight Selection." Presented at Southeast DSI Meeting, February 1980, Orlando, Florida, 265-267.

"Generating Random Partial Ordering Relations." Presented at Northeast DSI Meeting, April 1980, Philadelphia, Pennsylvania, 119-122.

"A Hypothesis Test for Homogeneity." Presented at National DSI Meeting, October 1980, Las Vegas, Nevada, 2:414.

"Optimal Systematic Withdrawal Strategies," (with Thomas H. McInish). Presented at National DSI Meeting, October 1980, Las Vegas, Nevada, 2:397.

"The Discrimination of Successful Ballet Dancers," (with Barbara A. Johnson). Presented at National DSI Meeting, October 1980, Las Vegas, Nevada, 2:332.

"Juveniles' Preferences for Television Watching and Other Activities," (with Ted Bonwit). Presented at Southeast DSI Meeting, February 1981, Charlotte, 170-171.

"Non-Profile Specific Measures of Social Homogeneity." Presented at Southeast DSI Meeting, February 1981, Charlotte, North Carolina, 167-169.

"Qualities of the Probability of a Condorcet Winner." Presented at Northeast DSI Meeting, April 1981, Boston, Massachusetts, 133-135.

"The Frequency of Condorcet's Paradox For Large Groups." Presented at Northeast DSI Meeting, April 1982, Washington, D.C., 121-123.

"A Procedure For Generating All Partial Orders Contained in a Linear Order." Presented at Northeast DSI Meeting, April 1982, Washington, D.C., 119-120.

"Powers of Subgroups in Voting Bodies," (with Peter C. Fishburn). Invited paper at the 793rd Meeting of the American Mathematical Society, March 1982, Bryn Mawr, Pennsylvania.

"Mathematical Programming and Discrimination," (with Erwin M. Saniga). Presented at National DSI Meeting, November 1984, Toronto, Ontario, 679-680.

"Mathematical Programming, Classification and Discrimination," Presented at 12th International Symposium on Mathematical Programming, August 1985, Cambridge, Massachusetts, 36A.

"A Cost Minimization Approach to Classification," (with Virginia Gempesaw). Presented at National DSI Meeting, November 1991, Miami Beach, 1162-1163.

"An Algorithm for Generating the Complete Set of Nonisomorphic Partial Orders." Presented at National DSI Meeting, November 1992, San Francisco, 1042.

"Two-Stage Constant Scoring Rules." Presented at National DSI Meeting, November 1992, San Francisco, 544-546.

"A Least Cost Two Stage Credit Scoring Model." Presented at National DSI Meeting, November 1994, Honolulu, 1153-1155.

"The Joint Condorcet Efficiency of Plurality and Borda Voting Rules." Presented at Northeast DSI Meeting, April 1996, St. Croix, USVI, 566-568.

"A Variable Selection Mixed Integer Linear Programming Model for Discriminant Analysis," (with Bret Wagner). Presented at Northeast DSI Meeting, April 1996, St. Croix, USVI, 544-546.

"The Probability of Electing the Condorcet Loser." Presented at National DSI Meeting, November 1996, Orlando, FL, 1112.

"An Integer Programming Approach to Brand Choice," (with Bret Wagner and Rick Andrews). Presented at National DSI Meeting, November 1996, Orlando, FL, 301-303.

"PERT Times with a Triangular Distribution for Activity Completion Times." Presented at Northeast DSI Meeting, April 1997, Annapolis, MD, 313-315.

"The Probability that Plurality Elimination and Negative Plurality Elimination Both Select the Condorcet Winner." Presented at the Northeast DSI Meeting, April 1998, Boston, MA, 336-338.

"Approximating the Probability that a Condorcet Winner Exists." Presented at International DSI Meeting, July 1999, Athens, Greece, 626-628.

"Decision Rules: Elections vs. Awards," (with Hemant Kher). Presented at National DSI Meeting, November 2001, San Francisco, CA, 1260.

"Condorcet Efficiency and Proximity to Single-Peaked Preferences." Presented at Third International Conference on Logic, Game Theory and Social Choice, September 2003, Siena, Italy, 282-283.

"The Likelihood of Complete Breakdown by Majority Rule." Presented at National DSI Meeting. November 2004, Boston, MA, 411-416.

"Centroid - A Widely Misunderstood Method in Facility Location Problems," (with Mugdim Pasic). Presented at International Conference on Industrial Engineering, December, 2005, Clearwater, FL, 810-816.

Presentations

"Social Homogeneity and Condorcet Winners: A Weak Connection." Presented at a workshop at University of Caen, France, May 1999.

"Approximating the Probability that a Condorcet Winner Exists." Presented at International Decision Sciences Institute Meeting, July 1999, Athens, Greece.

"Social Homogeneity and Condorcet Winners: An Explanation for an Elusive Relationship." Presented at National Public Choice Society Meeting, Charleston SC, March 2000.

"Elections and Voting Paradoxes." Presented at a seminar at Royal Military Academy, Breda, The Netherlands, April 2000.

"Condorcet's Paradox and the Likelihood of its Occurrence: Different Perspectives on Balanced Preferences." Presented at a seminar at University of Tilburg, The Netherlands, April 2000.

"Condorcet Efficiency: A Preference for Indifference."
- Presented at Dutch Congress of Mathematicians, University of Maastricht, April, 2000.
- Presented at SCW Society Meeting, Alicante, Spain, July 2000.

"Transitivity of Preference for a Probabilistic Chooser." Presented at European Operational Research Society Meeting, Budapest, Hungary, July 2000.

"Weighted Scoring Rules that Maximize Condorcet Efficiency." Presented at Society for Economic Design Meeting, Istanbul, Turkey, June 2000.

"Decision Rules: Elections vs. Awards," (with Hemant Kher). Presented at National Decision Sciences Institute Meeting, San Francisco CA, November 2001.

"Some Issues Related to Pairwise Majority Rule." Presented at EURO Conference on Operations Research, Brussels, Belgium, April 2002.

"The Effectiveness of Weighted Scoring Rules when Pairwise Majority Rule Cycles Exist." Presented at International Social Choice and Welfare Meeting, Pasadena, CA, July 2002.

"Condorcet Efficiency and Proximity to Single-Peaked Preferences." Presented at Third International Conference on Logic, Game Theory and Social Choice, Siena, Italy, September 2003.

"Probabilities of Election Outcomes with Two Dimensions: The Relative Impact of Unifying and Polarizing Candidates."
- Presented at Bosporus Workshop on Economic Design, Marmaris, Turkey, August 2003.
- Presented at a seminar at Abdus Salam International Centre for Theoretical Physics, Trieste, Italy, September 2003.
- Presented at Society for Economic Design Meeting, Palma de Mallorca, Spain, June 2004.

"The Sensitivity of Weight Selection for Scoring Rules and Profile Proximity to Single-Peaked Preferences."

- Presented at European Public Choice Society Conference, Berlin, Germany, April 2004.
- Presented at International Social Choice and Welfare Meeting, Osaka, Japan, July 2004.

"The Likelihood of Complete Breakdown by Majority Rule." Presented at National Decision Sciences Institute Meeting, Boston, MA, November 2004.

"The Odd Behavior of Plurality Rule"
- Presented at University of Caen, France, September 2004.
- Presented at Sabançi University, Istanbul, Turkey, October 2004.
- Presented at Bilgi University, Istanbul, Turkey, October, 2004.

"The Unexpected Behavior of Plurality Rule." Presented at First World Meetings of Public Choice Societies, Amsterdam, The Netherlands, March 2007.

"The Condorcet Efficiency of Voting Rules with Mutually Coherent Voter Preferences: A Borda Compromise," (with Dominique Lepelley). Presented at International Social Choice and Welfare Meeting, Montreal, June 2008.

"Condorcet Efficiency of Voting Rules with Strong Measures of Group Coherence," (with Dominique Lepelley and Hatem Smaoui). Presented at ADRES 2009 Conference: New Developments in Social Choice and Welfare Theories, University of Caen, France, June 2009.

"The Value of Research Based on Simple Assumptions about Voters' Preferences," (with Dominique Lepelley).
- Presented at Voting Power in Practice Workshop, Chateau du Baffy, Normandy, France, August 2010.
- Presented at Probability Calculations and Voting Theory Workshop, University of La Reunion, Saint Denis, France, April 2011.
- Presented at Workshop on Voting Rules and the Evaluation of Voting Paradoxes, University of Caen, Caen, France, May 2011

"The Probability of Observing the Majority Paradox," (with Vincent Merlin). Presented at European Public Choice Society Meeting, Rennes, France, May 2011.

"The Significant Impact of Abstentions on Election Outcomes," (with Dominique Lepelley). Presented at Eighth Murat Sertel Workshop on Economic Design, Decision, Institutions, and Organization: In the honor of Dominique Lepelley, Caen, France, May 2018.