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EDUCATION

1971: A.B. (Mathematics), Harvard College, Cambridge, MA
1976: Ph.D. (Mathematics), Massachusetts Institute of Technology, Cambridge, MA

EMPLOYMENT

1975-1981: Assistant Professor of Mathematics, Union College.
1981-1989: Associate Professor of Mathematics, Union College.
1989- 2006: Professor of Mathematics, Union College.
2006 - : William D. Williams Professor of Mathematics, Union College.

VISITING POSITIONS

1981-1982: York University & University of Toronto.
1998-1999: Universitat Autònoma de Barcelona & London School of Economics.
2004-2005: Universidad de Alicante & Université de Caen.
2013 (Fall): Université Paris Dauphine
2017-18 (Winter): Balliol College, Oxford (Oliver Smithies Fellowship)

EDITORIAL BOARDS

2002 - 2005: Dolciani Publications (Book series of the Mathematical Association of America).
2005 - 2009: International Journal of Game Theory (Research journal).
2005 - Mathematical Social Sciences (Research journal).
2016 - Studies in Economic Design (Book series, Springer).

AWARDS

2009: Stillman Prize for teaching (awarded to one Union College faculty member per year).

PUBLICATIONS

BOOKS AND CHAPTERS

1. *Simple Games: Desirability Relations, Trading, and Pseudoweightings* (with A. Taylor), Princeton University Press, 1999.
2. Introduction to the Theory of Voting, Chapter 2 in F. Brandt, V. Conitzer, U. Endriss, J. Lang, and A. Procaccia editors, *Handbook of Computational Social Choice*, Cambridge University Press, 23 - 56, 2016. *PDF file downloadable from http://www.cambridge.org/download_file/898428 (use password cam1CSC to unlock file).*
3. *The Future of Economic Design*, edited by J-F. Laslier, H. Moulin, R. Sanver and W.S. Zwicker, collection of 80 short essays, Springer, 2019.

RESEARCH ARTICLES

4. Flipping Properties: A Unifying thread in the Theory of Large Cardinals (with F. Abramson, L. Harrington, and E. Kleinberg), *Annals of Math. Logic* 12 (1), 1977, 37-58.
5. A Remark on $\text{Part}^*(\kappa, \lambda)$ (with C. A. DiPrisco), *Acta Cientifica Venezolana* 29, 1978, 365-366.
6. Flipping properties and supercompact cardinals (with C. A. DiPrisco) *Fundamenta Mathematicae* CIX (1980), 31-36.
7. Ultrafilters on spaces of partitions (with J. Henle), *Journal of Symbolic Logic* 47 (1982), 137-146.
8. $\text{P}_{\kappa\lambda}$ Combinatorics I: Stationary coding sets rationalize the club filter, in *Axiomatic Set Theory*, Contemporary Mathematics Vol. 31 (1984), American Mathematical Society, Providence R. I., 243-259.
9. $\text{P}_{\kappa\lambda}$ Combinatorics II: The RK ordering beneath a supercompact cardinal, *Journal of Symbolic Logic* 51 (1986), 605-616.
10. Playing games with games: the hypergame paradox, *American Mathematical Monthly* 90 (1987), 507-514.
11. Filter spaces: Towards a unified theory of large cardinals and embedding axioms (with A. Apter, C. DiPrisco, and J. Henle), *Annals of Pure and Applied Logic* 41 (1989), 93-106.

12. A beginning for structural properties of ideals on $P_\kappa\lambda$, in *Set Theory and its Applications* (1987 conference proceedings, York University) Springer Lecture Notes 1401 (1989), 201-217.
13. The voters' paradox, spin, and the Borda count, *Mathematical Social Sciences* 22 (1991), 187-227.
14. A characterization of weighted voting (with A. Taylor), *Proceedings of the American Mathematical Society* 115 (1992), 1089-1094.
15. Weighted voting, multicameral representation, and power (with A. Taylor), *Games and Economic Behavior* 5 (1993), 170-181.
16. Simple games and magic squares (with A. Taylor), *Journal of Combinatorial Theory (A)* 71 (1995), 67 - 88.
17. Old and new moving-knife schemes (with S. Brams and A. Taylor), *Mathematical Intelligencer* 7 (1995), 30-35.
18. Social choice and the Catalan numbers (with S. Young, and A. Taylor), *Mathematics Magazine* 68 (1995), 331-342.
19. Quasi-weightings, trading, and desirability relations in simple games (with A. Taylor), *Games and Economic Behavior* 16 (1996) 331-346.
20. Interval measures of power (with A. Taylor), *Mathematical Social Sciences* 33 (February, 1997) 23 - 74.
21. A moving-knife solution to the four-person envy-free cake-division problem (with S. Brams and A. Taylor), *Proceedings of the American Mathematical Society* 125, No. 2 (Feb., 1997) 547 - 554
22. Two applications of a theorem of Dvoretzky, Wald, and Wolfowitz to cake division (with J. Barbanel), *Theory and Decision* 43 (1997) 203 - 207.
23. Voting on referenda: the separability problem and possible solutions (with S. Brams and D. M. Kilgour), *Electoral Studies* 16, No. 3 (1997) 359-357.
24. The Paradox of Multiple Elections (with S. Brams and D. M. Kilgour), *Social Choice and Welfare* 15, No. 8 (1998) 211 - 236.
25. The bicameral postulates and indices of a priori voting power (with D. Felsenthal and M. Machover), *Theory and Decision* 44 (1998), 83-116.
26. Trading properties and Alexandrov kernels for boolean functions (with A. Taylor), *Discrete Applied Mathematics* 107 (2000), 203-214.

27. Coalition formation games with separable preferences (with N. Burani), *Mathematical Social Sciences* 45 (2003), 27-52
28. Weighted voting, abstention, and multiple levels of approval (with J. Freixas), *Social Choice and Welfare* 21 (2003), 399-431.
29. Which scoring rule maximizes Condorcet efficiency under IAC? (with D. Cervone and W. Gehrlein), *Theory and Decision* 58 (2005), 145 - 185.
30. Consistency Without Neutrality in Voting Rules: When is a Vote an Average?, *Mathematical and Computer Modelling*, special issue on Mathematical Modeling of Voting Systems and Elections: Theory and Applications, A. Belenky, ed., 48 (2008), 1357-1373.
31. A Characterization of the Rational Mean Neat Voting Rules, *Mathematical and Computer Modelling*, special issue on Mathematical Modeling of Voting Systems and Elections: Theory and Applications, A. Belenky, ed., 48 (2008), 1374-1384.
32. Anonymous voting rules with abstention: weighted voting, in Steven J. Brams, William V. Gehrlein, and Fred S. Roberts (eds.), *The Mathematics of Preference, Choice, and Order: Essays in Honor of Peter C. Fishburn*, Heidelberg: Springer (2009), 239-258.
33. Anonymous yes-no voting with abstention and multiple levels of approval* (with J. Freixas), *Games and Economic Behavior* 67 (2009), 428-444 * Former title "Anonymous voting games with abstention and multiple levels of approval: classification and counting"
34. Convex Decompositions (with D. Cervone), *Journal of Convex Analysis* 16 (2009), 367-376.
35. One-way monotonicity as a form of strategy-proofness (with M. Remzi Sanver), *International Journal of Game Theory* 38 (2009), 553-574.
36. Analysis of binary voting algorithms for use in fault-tolerant and secure computing (with K. Kwait, A. Taylor, D. Hill, S. Wetzonic, and R. Shangping), *Proceedings of the IEEE International Conference on Computer Engineering and Systems* (2010) 273-285.
37. Voting with rubber bands, weights, and string (with Davide Cervone, Ronghua Dai, Daniel Gnoutcheff, Grant Lanterman, Andrew Mackenzie, Ari Morse, and Nikhil Srivastava), *Mathematical Social Sciences* 64 (2012) 11-27.
38. Monotonicity properties and their adaptation to irresolute social choice rules (with M. Remzi Sanver), *Social Choice and Welfare* 39, no. 2-3 (Special Issue in Honor of Maurice Salles on Developments in Social Choice and Welfare Theories), 371-398 (2012).

39. The geometry of influence: weighted voting and hyper-ellipsoids (with Nicolas Houy), *Games and Economic Behavior* 84, 7–16 (2014).
40. Aggregation of binary evaluations: a Borda-like approach (with C. Duddy and A. Piggins), *Social Choice and Welfare* 46 (2016), 301-333.
41. Beyond Electing and Ranking: Collective Dominating Chains, Dominating Subsets and Dichotomies (with Jérôme Lang, Jérôme Monnot, and Arkadii Slinko), in *Proceedings of the 16th Conference on Autonomous Agents and MultiAgent Systems (AAMCS 2017)*, 24-32.
42. Cycles and Intractability in a Large Class of Aggregation Rules, *Journal of Artificial Intelligence Research* 61 (2018), 407-431.
43. Almost Envy-Free Allocations with Connected Bundles (with V. Bilò, I. Caragiannis, M. Flammini, A. Igarashi, G. Monaco, D. Peters, and C. Vinci), in *10th Innovations in Theoretical Computer Science Conference (ITCS 2019)*; Avrim Blum, editor; Article No. 12; pp. 12:1–12:20, Leibniz International Proceedings in Informatics, Schloss Dagstuhl – Leibniz-Zentrum für Informatik, Dagstuhl Publishing, Germany.

BOOK REVIEW

44. Review of *Voting and Collective Decision Making: Bargaining and Power* by Annick Laruelle and Federico Valenciano, *Games and Economic Behavior* 69 (2010), 517-522.

WORKING PAPERS

1. Envy-free Fair Division of Tangled Cakes and EF1 Fair Division of Graphs (with Ayumi Igarashi), in preparation.
2. Higher order Condorcet cycles (with Davide Cervone and Christopher Hardin), in preparation.
3. Social Dichotomy Functions (with C. Duddy, N. Houi, J. Lang, A. Piggins), in preparation.
4. Quasi-Linear Aggregation of Binary Relations, in preparation.
5. Scale Invariant Citation Indices (with Josep Freixas and Roger Hoerl), in preparation.