

ABBREVIATED CV

DONALD G. SAARI

Professional Address:

Institute for Mathematical Behavioral Sciences

University of California, Irvine

Irvine, CA 92697-5100

Phone: (949) 824-5894, Fax: (949) 824-3733, dsaari@uci.edu

Positions

- 2000 – , **University of California, Irvine**
 - 2003–, Director, Institute for Mathematical Behavioral Sciences
 - 2002 – 05, Director, UCI Center for Decision Analysis
 - 2000 – , Distinguished Professor: Economics and Mathematics
 - 2000 – , Professor (Courtesy Appt.) Dept. of Logic and Philosophy of Science
 - 2000 – , Member: Institute for Mathematical Behavioral Sciences
 - 2004 – , Member, Center for Democratic Studies
- 1968 – 2000, **Northwestern University**
 - 1995 – 2000, Arthur and Gladys Pancoe Professor of Mathematics, Northwestern University
 - 1988 – 2000, Professor, Department of Economics, Northwestern University
 - 1974 – 2000, Professor, Mathematics, Northwestern University
 - 1981 – 84, Chair, Department of Mathematics, Northwestern
 - 1976 – 2000, Professor, Applied Mathematics & Engineering Science
 - 1970 – 74, Associate Professor, Mathematics, Northwestern University
 - 1968 – 70, Assistant Professor, Mathematics, Northwestern University
- 1967-68, **Yale University**
 - Post-Doc, “Research Staff Astronomer,” Dept. of Astronomy, Yale

Education

- 1962 B.S., Michigan Technological University, Mathematics
- 1964 M.S., Purdue University, Mathematics
- 1967 Ph.D., Purdue University, Mathematics

Selective List of Honors

- **Honorary Societies & Fellowships**
 - 2001, National Academy of Sciences
 - 2004, Fellow, American Academy of Arts and Sciences
 - 2001, Fellow, American Association for the Advancement of Science
 - 1989, Guggenheim Fellow

- **Doctorat Honoris Causa,**
 - 1999, Michigan Technological University
 - 1998, Université de Caen, Caen, France
 - 1989, Purdue University
- **Recognition from universities**
 - 2005, UCI Distinguished Faculty Award for Research
 - 2002, Pacific Institute of Mathematical Sciences Distinguished Chair
 - 2002, Purdue University, “Outstanding Alumnus” award
 - 1997, Lansdowne Chair: University of Victoria, Canada
 - 1995, Academy of Arts and Sciences; Michigan Technological University
 - 1995, Charles Taft Lecturer. University of Cincinnati,
 - 1995, Concurrent Professorship; Nanjing University, Nanjing, China.
- **Awards from professional societies**
 - 1999, Allendoerfer Award; Math. Assoc. of Amer.
 - 1995, Chauvenet Prize; Math. Assoc. of Amer.
 - 1991, Duncan Black Research Award; Public Choice Society
 - 1985, Lester R. Ford Award; Math. Assoc. of Amer.

Publications

- **Books** Currently I have written or edited 10 books. A selection follows:
 - *Collisions, Rings, and Other Newtonian N-Body Problems*, American Math Society, Providence RI, 2005
 - *The Way it Was: Mathematics From the Early Years of the Bulletin*, American Math Society, 2003.
 - *Chaotic Elections! A Mathematician Looks at Voting*, American Math Society, 2001.
 - *Decisions and Elections; Explaining the Unexpected*; Cambridge University Press, 2001.
 - *Hamiltonian Dynamics and Celestial Mechanics*, (with Z. Xia), Contemporary Mathematics, vol 198, AMS, Providence, 1996.
 - *Basic Geometry of Voting*, Springer-Verlag, 1995.
- **Papers** I have published about 160 papers on topics ranging from dynamical systems, celestial mechanics, mathematical economics, decision analysis (in engineering and elsewhere), and voting theory. A selection of some recent papers follows
 - The Profile Structure for Luce’s Choice Axiom, *Journal Mathematical Psychology* **49** (2005), 226-253
 - Are part wise comparisons reliable? (with K. Sieberg), *Research in Engineering Design* **15** (2004), 62-71
 - Geometry of stable and chaotic discussion, *Amer. Math. Monthly*, **111** (May 2004), 377-393.
 - Consequences of reversing preferences, (with S. Barney), *Math Intelligencer* **25** (2003), 17-31.
 - Disturbing aspects of voting theory, *Economic Theory*, **22** (Oct. 2003), 529-556.

- Analyzing a “nail-biting” election, *Social Choice & Welfare*, **18** (2001), 415-430.
- The sum of the parts can violate the whole, (with K. Sieberg), *Amer. Pol. Science Review* **95**, (Number 2, June 2001), 415-433.
- Some surprising properties of power indices, (with K. Sieberg), *Games and Economic Behavior* **36** (2001), 241-263.
- More chaos; but, in voting and apportionments? Perspective, *Proceeding of Nat. Acad. of Sciences*, **96** (Sept. 14, 1999), 10568-10571.
- Mathematical structure of voting paradoxes 1; pairwise vote. *Economic Theory* **15** (2000), 1-53.
- Mathematical structure of voting paradoxes 2: positional voting. *Economic Theory* **15** (2000), 55-101.
- Explaining all three-alternative voting outcomes, *Jour. Econ. Theory* **87**, (1999), 313-355.
- Do we model the correct market information? pp. 83-108 in *The Theory of Markets*, ed. PJJ Herings, AJJ Talman, G van de Laan, North Holland, 1999.
- A geometric examination of Kemeny’s rule, (with V. Merlin) *Social Choice & Welfare*, **17** (2000), 403-438.
- The likelihood of dubious election outcomes, (with M. Tataru) *Economic Theory* **13** (1999), 345-363.

Talks Since 1980, I have given approximately 500 invited talks. A selection of recent ones are listed next.

- “Saarifest” International Conference, CIMAT, Guanajuato, Mexico/April 2005, “Thoughts about open problems in celestial mechanics”
- Banff Institute for Research Studies conference on “Aggregation and disaggregation (collective demand),” Banff, Canada /May 2005, “Eliminating paradoxes and negative economic conclusions”
- Université de Caen, Caen, France These were my *Condorcet Lectures*/ Nov. 2004 under the general title of “Mathematical Aspects of Social Choice.” The first lecture was “Dethroning Dictators” and the second was “What causes all of those voting and social choice paradoxes?”
- Mathematisches Forschungsinstitut, Oberwolfach, Germany, conference on “Design of Electoral Systems” / March, 2004, “The mathematical source of all voting paradoxes”
- Colloquium, Mathematics, University of Arizona / April 2005, “Central configurations—a problem for the 21st century”
- Colloquium, Cal Tech, Social Sciences / April 2005, “Dethroning dictators — and resolving all voting paradoxes.”
- Public Lecture, Carleton College, Northfield, Minn. / Oct. 2004, “Elections! But do we elect whom we really want?”
- Banff Institute for Research Studies. Conference on Celestial Mechanics /April, 2004, “A new way to analyze central configurations.”

- Banff Institute for Research Studies, Banff, Canada / March 2003, one of the two featured scientific speakers at the Opening Ceremonies, “Chaotic evolution of Newton’s Universe”
- Conference; New Trends in Astrodynamics, U. of Maryland, Jan. 2003, Keynote address; “Some thoughts about the Newtonian N-body problem.”
- National MAA Conference: Mathfest, Boulder, CO, July 2003, Invited hour speaker, “Geometry of Departmental Discussions”
- Nanjing University Centennial Celebration; “Forum of International Scholars” May, 2002, “Evolution of the universe”
- Combined Board of Mathematical Sciences Lecturer; EIU, June, 2002, 10 lectures on “The evolution of Newton’s N-body problem”