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REUBEN HERSH

PERSONAL Born 1927, Bronx, NY
Divorced, 2 children, 3 grandchildren
rersh@gmail.com
505-983-5044
1000 camino rancheros, santa fe nm 87505
BA English Literature Harvard 1946
US Army 1947
Scientific American 1948-52
Machine shops, NY metro area, 1952-1957
Ph D Mathematics NYU (Peter Lax) 1962
Fairleigh Dickinson University 1962
Stanford University 1962-64
University of New Mexico 1964--

MEMBER: MAA, Society of Friends, Amnesty International, Veterans for Peace

EDITORIAL BOARD: Philosophia Mathematica, College Math Journal, Journal of Humanistic Math

CONSULTING: Oxford U Press, Princeton U Press, Math Reviews, Springer

AWARDS:

Lloyd McKim Garrison Prize (undergraduate poetry)
National Book Award (with Phil Davis)
Chauvenet Prize (with Martin Davis)
Ford Prize (with Ray Lorch)

DOCTORAL STUDENTS: Larry Bobisud, Andy Schoene, Crepin Mahop, Steve Wollman, Maria del Carmen Jorge, Walter Roth, Susan Nett

MENTORS: Peter Lax, Einar Hille, Gian-Carlo Rota, Hao Wang, Mark Kac

COLLABORATORS AND CO-AUTHORS: Y. W. Chen, Richard J. Griego, Paul Cohen, Martin Davis, Phil Davis, Priscilla Greenwood, Kristin Umland, Vera John-Steiner, James A. Donaldson, Archie Gibson, Mark Pinsky, George Papanicolaou, Tosio Kato, Bob Cogburn, Larry Bobisud, Jack Macki, Stan Steinberg, Constantino Tsallis, Elena Marchisotto, Ulf Persson

VISITING POSITIONS: NYU, Brown, Berkeley, CIEA Mexico City, Rockefeller, St.

Johns, Santa Fe Prep

BOOKS: *The Mathematical Experience* (National Book Award, w. Phil Davis) (Birkhauser)

Descartes' Dream (w. Phil Davis) (Dover)

What Is Mathematics, Really? (Oxford)

18 Unconventional Essays on the Nature of Mathematics (edited) (Springer)

Loving and Hating Mathematics (w. Vera John-Steiner) (Princeton, 2011)

What do we do when we do mathematics? Selected articles. American Mathematical Society, 2014.

Peter Lax: a memoir. A Mathematician in New York in the 20th century. American Mathematical Society, 2014.

JOURNAL ARTICLES

Mathematical practice and life

"Mathematical methodology, with an elementary example," Eureka, Dec. 2013

"How Mathematicians Convince Each Other," Van Bendegem Festschrift, College Publishers, London

"Mathematical Intuition: Poincare, Polya, Dewey", Chapter 13 of *Logic and Knowledge*, edited by Carlo Cellucci, Emily Grosholz, and Emiliano Ippoliti, Cambridge Scholars Publishing, 2011.

"To Establish New Mathematics, We Use Our Mental Models and Build on Established Mathematics", in *From a heuristic point of view. Essays in honor of Carlo Cellucci*, edited by Emiliano Ippoliti, Cesare Cozzo, Cambridge Scholars Publishing, to appear 2013.

"Paul Cohen in 1963," *The Mathematical Intelligencer*, 24 (3) 38-40, 2011

"Dialogo fra un matematico de successo e uno studente testardo", *Archimede* (Firenze, Italia) ottobre-dicembre 2010 4/2010, 202--205

"Alvin White," *Journal of Humanistic Mathematics*, 2011

"Under-represented Then over-represented: A Memoir of Jews in American Mathematics," *College Mathematics Journal*, January 2010, pp. 2-9

"Refuge from Misery and Suffering," *Mathematical Intelligencer*, Winter, 2008, 30 (1) 22-26

"Clarence Stephens and the Potsdam Model," *Math Horizons*, February 2010, pp 18-21, 29

Introduction to *Indiscrete thoughts* by Gian-Carlo Rota, Birkhauser, 1997

"Report on programs for minorities in mathematics", *Newsletter of SW region of MAA*, 1988; Focus

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"What is humanistic mathematics?," *Mathematics in College*, 1990 49-50

“Humanistic mathematics and the real world,” in *Essays in Humanistic Mathematics*,
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 “Szeged in 1934,” (edited from manuscripts of Edgar Lorch) *Amer Math Monthly* 100(3)
 Winner of Ford Prize
 “Math lingo vs. plain English: double entendre”, *Amer Math Monthly* January 1997 vol
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 “Mathematical menopause, or, a young man’s game?” *The Mathematical Intelligencer*
 23(3) 2001 52-60
 “Form and function in mathematical modeling,” talk at Budapest meeting of Santa Fe
 Institute
 “The Origin of Chaos,” talk at Santa Fe Institute
 “Mathematics and Ethics,” *The Mathematical Intelligencer* 12(3) 1990 12-15
 “Ethics for Mathematicians,” in *Philosophy of Math Education*, P. Ernest ed., 2007
 “Creativity and Ethics,” w. V. John-Steiner

Partial differential equations

“Mixed problems in several variables,” *J Math Mech* 12(3) 1963
 “Boundary conditions for equations of evolution,” *Arch Rat Mech Anal* 16(4) 1964
 “On surface waves with finite and infinite speed of propagation,” *Arch Rat Mech Anal*
 19(4) 1965
 “On vibration, diffusion or equilibrium across a plane interface,” *Arch Rat Mech Anal*
 21(5)1966
 “The three-dimensional wave equation in a characteristic quarter-space,” with Y W Chen,
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 “Finite difference approximations for mixed initial-boundary value problems of general
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 “On the general theory of mixed problems,” *Hyperbolic Equations and Waves*, Springer,
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 “Direct solution of general one-dimensional parabolic equations via an abstract
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 “The method of reflection for two-sided problems of general type,” in *Studies and Essays*
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 “A perturbation series for Cauchy’s problem for higher-order abstract parabolic
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 “Hyperbolic equations with coefficients in an enveloping algebra” (with S Steinberg) *J*
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Random evolutions

“Random semigroups, Markov chains, and systems of partial differential equations” (with Richard J Griego) Proc Nat Acad Sci February 1969

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“Random evolutions are asymptotically Gaussian” (with M Pinsky) Comm Pure & Appl Math vol 25 1972 pp 33-44

“Non-commuting random evolutions, and an operator-valued Feynman-Kac formula” (with G Papanicolaou) Comm Pure & Appl Math vol 25 1972 pp 337-367

“Two limit theorems for random differential equations” (with R Cogburn) Indiana U Math J vol 22 1973 pp 1067-1089

“Random evolutions, a survey of results and problems,” Rocky Mt J Math, Summer 1974 pp 443-477

“Weyl’s theorem for certain operator-valued potentials” (with R. Griego) Indiana Univ Math J 1978 27(2) pp 195-209

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Probability

“A class of central limit theorems for convolution products of generalized functions,” Trans Amer Math Soc June 1969

“Some limit theorems for stochastic equations and applications” (with G Papanicolaou) Indiana U Math J vol 21 1972 pp 815-840

“Maxwell’s coefficients are conditional probabilities” Proc Amer Math Soc June 1974 pp 449-453

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“Quasi-standard random variables and stochastic differentials” (with P. Greenwood) *Stochastic differential equations* Springer Lecture Series no 451 pp 35-62

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Linear operator equations

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Brownian motion and potential theory (with Richard Griego) Scientific American March 1969
Nonstandard analysis (with M Davis) Scientific American June 1972 pp 78-86
Hilbert’s tenth problem (with M Davis) Scientific American November 1973 pp 84-91
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Infinity. *Encyclopedia Britannica*

Humor

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William Byers, “How mathematicians think,” Notices of the AMS, 54 (11) December, 2007
Neal Koblitz, “Random Curves,” College Math J., 40 (2), March, 2009
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George Szpiro, “Poincare’s Prize,” College Math J., September, 2009
Alain Badiou, “Number and numbers,” The Mathematical Intelligencer, 2009, #3
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Ian Stewart, “Letters to a young mathematician,” The Mathematical Intelligencer, 2007, (29), 86-87
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Jonathan Borwein and David Bailey, “Mathematics by experiment” and
“Experimentation in mathematics,” SIAM Review (with R. Frye)
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Stanislaw Ulam, “Sets, numbers and universes,” “Analogies between analogies,”
“Science, computers and people” The Mathematical Intelligencer 14 (4) 1992,
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R. Utton, “The Social Life of Numbers” J Anthropological Res.
Paul Hoffman, “Archimedes Revenge”, American Scientist 77(5) sept-oct 1989, 500-501
Mark Kac, “Enigmas of chance,” Advances in Mathematics September 1986 p 305

Gian-Carlo Rota, "Indiscrete Thoughts," *College Math Journal*
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Alberto Martinez, "Negative Math," Princeton U. Press
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Paul Ernest, "Philosophy of Mathematics Education," *Philosophia Mathematica*, May 1994, 172--176
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Marcia Ascher, "Ethnomathematics," *SIAM Review* 35 (1) March 1993, 151-153
Clifford A. Pickover, "Mazes for the Mind," *IEEE Spectrum*, April 1993, pp7. 12
David Darling, "Equations of Infinity," *IEEE Spectrum*
Mark Kac, G.-C. Rota and J. Schwartz, "Discrete Thoughts," *Review of Mathematics Books and Software*
Jacot & Hudson, "The way men think," w. V. John-Steiner, *Journal of Gender Studies*
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Stanislas Dehaene, "The Number Sense," *American Mathematical Monthly*
Marcus du Sautoy, "The music of the primes," *London Times*
John Derbyshire, "Prime obsession," *London Times*
Keith Ball, "Strange curves, counting rabbits..." *London Times*
Thomas A. Garrity, "All the mathematics you missed," *UMAP Journal*
Amir Aczel, "Geometrical landscapes," *American Scientist*
David Corfield, "Towards a philosophy of real mathematics," *SIAM Review*
Donald Estep, "Practical analysis in one variable," *SIAM Review*

Interviews

What is mathematics, really? Edge website, Circuit (Canberra Math Assoc March 1999)