

**SOLOMON W. GOLOMB
CURRICULUM VITAE**

BORN: 5/31/32, Baltimore, MD, U.S.A.

EDUCATION

B.A.	The Johns Hopkins University	1951	Mathematics
M.A.	Harvard University	1953	Mathematics
Ph. D.	Harvard University	1957	Mathematics

EXPERIENCE

2008-	Distinguished University Professor, University of Southern California.
1999-	Andrew and Erna Viterbi Professor of Communications, University of Southern California.
1995-1998	Director of Technology, Annenberg Center for Communication, University of Southern California.
1993-	University Professor, University of Southern California.
1986-1989	Vice Provost for Research, University of Southern California.
1975-1976	President, Faculty Senate, University of Southern California.
1964-	Professor, Mathematics and Electrical Engineering, University of Southern California.
1963-1964	Associate Professor, Electrical Engineering, University of Southern California.
1960-1963	Deputy Section Chief, Telecommunications Research Section, Jet Propulsion Laboratory, Pasadena, CA.
1958-1960	Research Group Supervisor, Information Processing Group, Jet Propulsion Laboratory, Pasadena, CA.
1956-1958	Senior Research Engineer, Communications Research Group, Jet Propulsion Laboratory, Pasadena, CA.

VISITING POSITIONS

- 1990 (Jan.-Feb.) Visiting Fellow, Sackler Institute of Advanced Study, Tel Aviv University, Ramat Aviv, Israel.
- 1971-1972 Visiting Professor of Applied Science, California Institute of Technology, Pasadena, CA.
- 1959 (Sept.-Nov.) Fellow of the Institute of Communication Sciences, Massachusetts Institute of Technology, Cambridge, MA.
- 1955-1956 Fulbright Fellow in Mathematics, University of Oslo, Oslo, Norway

PROFESSIONAL RECOGNITION

Elected to National Academy of Sciences (2003); Elected to National Academy of Engineering (1976); Fellow of the IEEE (1982); Fellow of the American Association for the Advancement of Science (1988); Shannon Lecturer at the 1985 International Symposium on Information Theory, Brighton, England; Creative Scholarship and Research Award of the University of Southern California (1968-69); Presidential Medallion of the University of Southern California (1985). U.S. Representative to meetings of the International Union of Radio Science (URSI). Fellow of the American Academy of Arts and Sciences (2003); Distinguished Alumnus Award, Johns Hopkins University (2002); Elected to the Board of Governors and its Academic Advisory Committee, of the Technion Israel Institute of Technology (2003); Medal of the U.S. National Security Agency (1992); Foreign Member, Russian Academy of Natural Sciences (1994). Lomonosov Medal, Russian Academy of Sciences (1994); Kapitsa Medal, Russian Academy of Natural Sciences (1995); Honorary Doctorate Degrees: Dubna International University (1995); Hebrew Union College (1996); Technion - Israel Institute of Technology (2011); Awarded the Year 2000 Richard W. Hamming Gold Medal of the IEEE; Awarded the 2012 William Procter Gold Medal of Sigma Xi; 2012 United States National Medal of Science; Fellow of the American Mathematical Society (2012), and Fellow of the Society for Industrial and Applied Mathematics (2013).

HONORARY SOCIETY MEMBERSHIPS

Phi Beta Kappa, Phi Kappa Phi, Sigma Xi, Eta Kappa Nu, Pi Delta Epsilon, Golden Key, etc.

PROFESSIONAL SOCIETY MEMBERSHIPS

American Mathematical Society (AMS), Mathematical Association of America (MAA), Society for Industrial and Applied Mathematics (SIAM), Institute of Electrical and Electronic Engineers (IEEE), American Association for the Advancement of Science (AAAS), International Union of Radio Science (URSI).

REPRESENTATIVE PUBLICATIONS

1. *Shift Register Sequences*, Holden-Day, San Francisco, CA, 1967, revised second edition, Aegean Park Press, Laguna Hills, CA, 1982.
2. "Random Permutations," *Bulletin of the American Mathematical Society*, November, 1964.
3. "Permutations by Cutting and Shuffling," *SIAM Review*, October, 1961.
4. "On the Plausibility of the RNA Code," *NATURE*, December, 1962.
5. "Applications of the Numbered, Undirected Graphs," (with G.S. Bloom), *Proceedings of the IEEE*, April, 1977.
6. "A Class of Probability Distributions on the Integers," *Journal of Number Theory*, May, 1970.
7. "On the Classification of Balanced Binary Sequences of Period $2n-1$," *IEEE Transactions on Information Theory*, November, 1980.
8. "On the Characterization of PN Sequences," (with U. Cheng), *IEEE Transactions on Information Theory*, July, 1983.
9. "Distributions of Periods and Frequencies of Runs in Random Binary Sequences," *Advances in Applied Math*, September, 1989.
10. "Linear Spans of Modified de Bruijn Sequences," (with G. Mayhew), *IEEE Transactions on Information Theory*, September, 1990.
11. *Digital Communications With Space Applications*, Prentice-Hall, 1969. Second edition, Peninsula Publishers, 1982.
12. *Polyominoes*, Scribners, 1965, revised and expanded second edition, Princeton University Press, 1994.
13. *Basic Concepts in Information Theory and Coding* (with R.A. Scholtz and R.E. Peile), Pelnum Publishers, 1994.
14. *Signal Design for Good Correlation for Wireless Communication, Cryptography, and Radar*, Cambridge University Press, 2005, (with Guang Gong, University of Waterloo, Ontario, Canada).

GRADUATE STUDENTS/POSTDOCTORAL SCHOLARS

- Former Postdocs:** A. Lempel (1968-1969), T. Helleseth (1977-1978), T. Bu (1979-1980), T. Etzion (1985-1986), H. Taylor (1982-1991), H. Song (1992-1994), G. Gong (1996-1998), B.-N. Pei (2006-2007).
- Former Ph.D. Students (1960 to present):** J. Stiffler, R. Tausworthe, A. Waksman, W. Hurd, C. Fuzak, D. Sherman, H. Trachtenberg, H. Fredricksen, R. Thoene, M. Cohen, G. Bloom, U. Cheng, H. Taylor, B. Tang, G. Mayhew, G. Yovanof, N. Zhang, C.W. Walker, P. Gaal, H.-Y. Song, D. Rutan, Wensong Chu, A. Bekir, H.-K. Lee, P.-F. Lee.

COLLABORATORS

- Long-term associations:** L.R. Welch, B. Gordon, J. Selfridge, A. Lempel, R. Scholtz, I.S. Reed, H. Fredricksen, A. Hales, J. Franklin, H. Taylor, P. Erdős.
- Ph.D. Supervisor:** David V. Widder.

BOARDS OF DIRECTORS

Technology Service Corporation (Acquired by Westinghouse)
Intelcom, Inc. (Successful IPO)
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Illgen Simulation Technologies, Inc. (Acquired by Northrop-Grumman)
Space Computer Corp. (Acquired by Excelis Corp.)

CONSULTING

Starting in 1954, a frequent consultant to major aerospace and biotech companies, defense contractors, computer firms, high-technology start-ups, and U.S. government agencies.

JOURNAL PUBLICATIONS

1. "Checkerboards and Polyominoes", *The American Mathematical Monthly*, Vol. 61, No. 10, December, 1954.
2. "Sets of Primes with Intermediate Density", *Mathematica Scandinavica*, Vol. 3, 1955.
3. "Properties of Consecutive Integers", *Nordisk Matematisk Tidsskrift*, Vol. 4, 1956.
4. "Combinatorial Proof of Fermat's 'Little' Theorem", *The American Mathematical Monthly*, Vol. 63, No. 10, December, 1956.
5. "Comma-Free Codes" (with B. Gordon and L.R. Welch), *The Canadian Journal of Mathematics*, Vol. 10, 1958.
6. "Construction and Properties of Comma-Free Codes" (with M. Delbrück and L.R. Welch), *Biologiske Meddelelser, Kongelige Danske Videnskabernes Selskab*, Vol. 23, No. 9, 1958.
7. "A Connected Topology for the Integers", *The American Mathematical Monthly*, Vol. 66, No. 8, October, 1959.
8. "On the Classification of Boolean Functions", *IEEE Transactions on Information Theory*, June, 1959.
9. "On the Enumeration of Polygons" (with L.R. Welch), *The American Mathematical Monthly*, Vol. 67, No. 4, April, 1960.
10. "The Twin Prime Constant", *The American Mathematical Monthly*, Vol. 67, No. 8, October, 1960.
11. "Radar Measurements of the Planet Venus" (with L. Malling), *Journal of the British I.R.E.*, October, 1961.
12. "A New Derivation of the Entropy Expressions", *IEEE Transactions on Information Theory*, July, 1961.
13. "Extraterrestrial Linguistics", *Astronautics & Aeronautics Magazine*, May, 1961.
14. "Extra-Terrestrial Linguistics", *Newsletter of the Information Theory Group of the IEEE*, July, 1961.
15. "Permutations by Cutting and Shuffling", *SIAM Review*, October, 1961.
16. "A Short Primer for Extraterrestrial Linguistics", *Air Force and Space Digest*, July, 1961.
17. "On the Plausibility of the RNA Code", *Nature*, December, 1962.
18. "Whither Electronics Research", *Astronautics & Aeronautics Magazine*, January, 1962.

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