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David.Parnas@UL.ie

PERSONAL:Born: 10 February 1941; Married; Two Children
Citizen of Canada**AREAS OF INTEREST:**

Software: Design, Documentation, Quality Assurance

The term “software engineering” was coined to suggest that those who design and build software should work with the professional knowledge and discipline that is expected of engineers in other fields. Engineers have been taught a well developed set of problem-solving skills, analytical methods, mathematics, and scientific knowledge that allows them to apply sound methods to the design of trustworthy useful devices. They need not rely exclusively on intuition and natural ability. Software development is now supported by a similar body of knowledge but not by an appropriate educational and licensing system. Expanding the body of knowledge, and assisting in the development of appropriate educational and licensing systems, are my professional goals.

I have been studying the problems of software development since 1965. By combining system construction, consultation, and academic research I have been able to develop principles and methods that are both of academic interest and applicable to real-world problems. My work, much of which is listed below, has received wide recognition. It includes a number of papers on modularity, specifications, documentation and concurrency that are considered fundamental contributions.

It is my intent to continue confronting the problems of software development, taking time to identify the fundamental causes of those problems, experimenting with better methods and ideas, writing papers, and teaching what I have learned. In designing systems, developing theories, and writing papers, I am challenged by Albert Einstein's, “Everything should be as simple as possible, but not simpler”.

EDUCATION:1954-1957 Bronx High School of Science, New York, New York
1957-1961 B.S.Electrical Engineering (honours), Carnegie Institute of Technology, Pittsburgh, Pa.
Fall 1961 Graduate student at University of Michigan, Ann Arbor, MI; “A” average.
1962-1965 Graduate student at Carnegie Institute of Technology, M.S. 1964 Electrical Engineering
Ph.D. 1965 Electrical Engineering - Systems & Communications Sciences**LICENSE:**

Professional Engineer in the Province of Ontario

¹ On extended leave of absence from McMaster University, Hamilton, Ontario, Canada.

PROFESSIONAL EXPERIENCE:

1960-1965 Teaching, Electrical Engineering, Carnegie Institute of Technology.
1965-1966 Assistant Professor, Computer Science, Univ. of Maryland, College Park, Md.
1965-1969 Assistant Professor of Computer Science and Electrical Engineering, Carnegie-Mellon University, Pittsburgh, Pa.
1969-1970 Advisor to Philips-Electrologica, Apeldoorn, The Netherlands
Summer 1970 Visiting Scientist and Lecturer, MBLE (Philips) Research Laboratory Brussels, Belgium.
1970-1973 Associate Professor of Computer Science, Carnegie Mellon Univ., Pittsburgh, PA.
1972-1979 Consultant to the Naval Research Laboratory.
1973-1976 Professor and Head of the Research Group on Operating Systems at the Technical University of Darmstadt, Germany.
1976-1982 Professor of Computer Science at University of North Carolina at Chapel Hill.
1979-1982 Visiting Scientist at IBM, Federal Systems Division (half-time), Bethesda MD.
1979-1982 Half-time employee, Head of the Software Engineering Research Section, US Naval Research Laboratory, Washington D.C
1982-1986 Professor of Computer Science at University of Victoria, British Columbia, Canada.
1982-1986 Investigator, Software Cost Reduction Project, US Naval Research Laboratory, Washington D.C.
1986-1991 Professor of Computer Science at Queen's, Kingston, Canada.
1991- 1997 Professor of Electrical and Computer Engineering, McMaster University, Canada
1995 - 2000 NSERC/Bell Industrial Research Chair in Software Engineering at McMaster
1998- Professor of Computing and Software at McMaster University (now on Leave)
1998- 2002 Director of the Software Engineering Programme at McMaster University,
2001 Acting Chair, Department of Computing and Software (1 October - 30 December)
2002- Director of Software Quality Research Laboratory, Professor of Software Engineering
SFI Fellow, University of Limerick, Ireland

OTHER OFFICES HELD:

President, Science for Peace. (1990 - 1993)
Deputy Chairman, Canadian Pugwash Group. (1991 - 1993)

HONOURS:

- 1979: “Best Paper” award of the Association for Computing Machinery (for 60).
- 1986: “Eminent Lecturer” Institution of Engineers, Australia
- 1986: Honorary Doctor of Technical Science, (“Doktors der technischen Wissenschaften - ehrenhalber”), granted by the Federal Institute of Technology (ETH) in Zurich Switzerland,
- 1987: Norbert Wiener Award for Professional and Social Responsibility from Computing Professionals for Social Responsibility
- 1991: “Most Influential Paper from ICSE 3” - awarded at ICSE 13 (13th International Conference on Software Engineering), (for 60)
- 1992: Elected a Fellow of the Royal Society of Canada
- 1994: Elected a Fellow of the Association for Computing Machinery
- 1995: “Best Paper from ICSE 7” (with David Weiss and Paul Clements) - awarded at the 17th International Conference on Software Engineering.(for 79)
- 1996: Doctorate Honoris Causa, granted by Catholic University of Louvain (Belgium)
- 1998: “Outstanding Research Award” of the Association for Computing Machinery Special Interest Group on Software Engineering
- 1998: Merit Award, Carnegie Mellon University - Alumni Association.
- 1999: “Practical Visionary Award” presented at a symposium in honour of the late Dr. Harlan Mills at the International Conference on Software Engineering in Los Angeles Ca.
- 1999: “Component and Object Technology Award” presented at “TOOLS 99” Santa Barbara Ca.
- 2001: Elected a Fellow of the Canadian Academy of Engineering
- 2001: Winner of the FifF (Forum Informatiker für Frieden und Verantwortung) Prize

PUBLICATIONS:

1. Parnas, D.L., “Kirchhoff’s Laws”, Programmed Text, Electrical Engineering Department, Carnegie Institute of Technology, Pittsburgh PA., 1960, 43 pgs.
2. Parnas, D.L., “Elementary Calculus: Programmed Study Material”, Computation Center, Carnegie-Mellon University, Pittsburgh PA., 1962.
3. Strauss, J.C., Parnas, D.L., Snelsire, R., Wallach, Y., “A Design-Emphasis Problem Solving Experience”, Electrical Engineering Department, Carnegie Institute of Technology, Pittsburgh PA., 1963, 129 pgs.
4. Parnas, D.L., “System Function Description-Algol”, (Ph.D. Thesis), Computation Center, Carnegie-Mellon University, Pittsburgh PA., February 1965, 100 pgs.
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12. Parnas, D.L., Darringer, J.A., "SODAS and a Methodology for System Design", *Proceedings of AFIPS 1967 Fall Joint Computing Conference*, pp. 449-474.
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20. Parnas, D.L., review of "Dynamic Protection Structures", (B. W. Lampson, *Proceedings AFIPS 1969 FJCC*), *Computing Reviews*, 12, 1, January 1971, pp. 29-30.
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 - Also in *Software Specification Techniques* edited by N. Gehani & A.D. McGettrick, AT&T Bell Telephone Laboratories, 1985, pp. 75-88 (QA 76.7 S6437).
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 - Translated into Japanese - *BIT*, vol. 14, no. 3, 1982, pp. 54-60.
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66. Parnas, D.L., "Research Problems in Programming Methodology, In Research Directions in Software Technology", Peter Wegner (Ed.), The MIT Press, 1979, pp. 352-385.

67. Parnas, D.L., "The Role of Program Specifications", in *Research Directions in Software Technology*, Peter Wegner (Ed.), The MIT Press, 1979, pp. 364-370.
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 - Translated into German - *Software Wars*, in *Kursbuch 83, Krieg und Frieden - Streit um SDI*. Published by Kursbuch/Rotbuch Verlag, March, 1986. Also a partial translation "Wie Kunstliche Blumen", in *Frontal*, May/June 1986, p. 46.
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