

Curriculum Vitae of Richard L. Phillips, Ph.D.

Richard L. Phillips

1291 Lejano Lane
Santa Fe, NM 87501-8751

Expertise

- Computer Graphics
 - Graphical User Interfaces
 - Image Editing Systems
 - Computer Painting Systems
 - Multimedia Document Systems
 - Medical Record Systems
 - Bioterrorism Systems
 - Java, C++, Objective-C
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Professional Summary

Recent experience has been in computer graphics hardware and software development, computer animated film production, interactive environmental mapping systems, computer aided design, database management systems, interactive query languages, low cost computer graphics systems, raster graphics algorithms, digital paint systems, distributed graphics systems, graphics-based user interface management systems, microcoded image synthesis algorithms, graphics-based workstations, systems integration, window systems, multimedia digital publication and networking.

Earlier experience was in the areas of dissociated gas flows and heat transfer on re-entry bodies, heat shield design, trajectory dynamics, design of manned re-entry vehicles, magnetogasdynamics and its application to hypersonic vehicles, interaction of electromagnetic radiation with plasma, studies and experimentation in fine particle magnets, theoretical and experimental studies of electric arc heaters and basic electric arc phenomena.

Employment History

From: 1997 **RL Phillips Consulting, Inc.**
To: Present Santa Fe, NM
Position: *President*

From: 1995 **Los Alamos National Laboratory**
To: 2001
Position: *1995-2001: Guest Scientist*
1987-1995: Technical Staff Member

From: 1961 **University of Michigan**
To: 1987 Ann Arbor, MI

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Position: 1987: *Professor Emeritus, Aerospace Engr. & Elect. Engr. & Comp. Sci.*
1974-1987: *Professor, Aerospace Engr. & Elect. Engr. & Comp. Sci.*
1968-1974: *Associate Professor, Aerospace Engineering*
1965-1968: *Assistant Professor, Aerospace Engineering*
1961-1964: *Associate Research Engineer, Gas Dynamics Lab*

From: 1958 **Bendix Systems Division**
To: 1961 Ann Arbor, MI
Position: *Acting Head, Plasma Physics Lab, Flight Sciences Dept.*

From: 1957 **Space Technologies Lab (now TRW, Inc.)**
To: 1958 Los Angeles, CA
Position: *Member of Technical Staff*

Consulting History

From: **Los Alamos National Laboratory**
To: Los Alamos, NM
Duties: Program design and development for patient immunization record system using Java and CORBA-based database.

From: 1978 **Applied Dynamics International, Inc.**
To: 1987 Ann Arbor, MI
Duties: Raster graphics terminal development and supporting programming.

From: 1978 **Satellite Business Systems**
To: 1979 Washington, DC
Duties: Graphical user interface development for teleconferencing systems.

From: 1977 **Tektronix, Inc.**
To: 1978 Wilsonville, OR and Detroit, MI.
Duties: Graphical user interfaces for Tektronix storage tubes. Development of an Apple II based emulator for the Tektronix terminal command language.

From: 1984 **Raster Technologies, Inc.**
To: 1985 North Billerica, MA
Duties: Development of a Tektronix 4014 command stream emulator for the Raster Technologies One/10 raster graphics terminal.

From: 1987 **Tricord Systems**
To: 1989 Minneapolis, MN
Duties: Consult on applications development for Tricord's server systems.

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From: 1989 **Fluent Machines (now Novell)**
To: 1991 North Billerica, MA
Duties: Programming and testing related to Fluent's digital video networking system.

From: 1984 **World Computer Graphics Association**
To: 1986 Arlington, VA
Duties: Lecturer in Computer Graphics in the United States and Europe.

From: 1984 **American Institute of Aeronautics & Astronautics**
To: 1986 New York, NY
Duties: Development and presentation of short courses on computer graphics applications in engineering.

From: 1988 **SIGGRAPH**
To: 1990 New York, NY
Duties: Development of computer graphics demonstrations using MediaView, a multimedia publishing system.

Litigation Support Experience

Date: 2007-08 **Fish & Richardson**
Case Witness Systems Inc. v. Nice Systems
Project: Consulting and testifying expert
Status: Settled

Date: 2005-06 **Weil, Gotshal and Manges, LLP**
Case Microsoft Corporation v. America Video Graphics (AVG)
Project: Consulting expert
Status: Settled

Date: 2004-06 **Sidley Austin LLP**
Case DreamWorks v. Sitrick
Project: Consulting and testifying expert
Status: Summary judgment rendered in favor of DreamWorks

Date: 2002-03 **Fish & Richardson**
Case Corel Corporation v. Heidelberger
Project: Consulting and testifying expert
Status: Settled

Date: 2000-02 **Gray Carey Ware & Freidenrich**
Case Adobe Systems v. Macromedia
Project: Consulting and testifying expert
Status: Case decided for Adobe

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Date: 1999-00 **Fish & Richardson**
Case Adobe Systems v. Heidelberger
Project: Consulting and testifying expert
Status: Settled

Date: 1997-98 **Nixon & Vanderhye PC**
Case American Photo Booths Inc. v. Atlus Dream Entertainment
Project: Consulting expert
Status: Settled

Date: 1998 **Gibson, Dunn & Crutcher**
Case ChromaVision Medical Systems v. Idea Research
Project: Consulting expert
Status: Settled

Date: 1996-97 **Fish & Richardson**
Case Adobe Systems v. Quantel
Project: Consulting and testifying expert
Status: Case decided for Adobe by a jury

Patents

<u>Patent Number</u>	<u>Date Issued</u>	<u>Title</u>
6186553	2/13/2001	Theme Calendar

Education

<u>Year</u>	<u>College/University</u>	<u>Degree</u>
1964	University of Michigan, Ann Arbor, MI	Ph.D. – Aerospace Engr.
1957	University of Michigan, Ann Arbor, MI	MS – Aerospace Engr.
1956	University of Michigan, Ann Arbor, MI	BS – Aerospace Engr. & Math

Publications

“Communicating with the Hypersonic Vehicle,” *Astronautics*, March, 1959 (with co-author).

“Use of Drag Modulation to Reduce Deceleration Loads During Atmospheric Entry,” *ARS Journal*, June 1959 (with co-author).

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“Microwave Propagation through a Magneto-Plasma,” J. of Applied Physics, March 1961 (with co-author).

“Descent Trajectories for Manned Space Vehicles,” Space Technology Laboratories, Inc., Tech. Rept., June 1958.

“A Summary of Several Techniques used in the Analysis of High Enthalpy Level, High Cooling Ratio Turbulent Boundary Layers on Blunt Bodies of Revolution,” Space Technology Laboratories, Inc., Tech. Rep., Nov. 1957.

“The Effect of Magnetic Drag on Re-Entry Body Heating,” ARS Journal, May 1961.

“Fundamental Considerations in the Design of an AC Arc Heater,” ARL 64-9, Aerospace Research Laboratories, Jan. 1964.

“A Three Phase AC Arc Heater,” ARL 64-29, Aerospace Research Laboratories, Feb. 1964 (with co-authors).

“Fundamental Considerations in Arc Heater Design,” presented at AGARD Specialist's Meeting on “Arc Heaters and MHD Accelerators for Aerodynamic Purposes,” 21-23 Sept., 1964, Brussels, AGARDograph 84, Sept. 1964.

“Development of a Three Phase Arc Heater,” presented at Semi-Annual Meeting of Supersonic Tunnel Association, April 6-7, 1964, Princeton (with co-authors).

“Structure of the Alternating Current Arc,” Bull. Am. Phys. Soc., Series II, Vol. 9, No. 5, 1964.

“The Behavior of Dynamic Electric Arcs,” Ph.D. thesis, ARL 64-150, Aerospace Research Laboratories, Sept. 1964.

“Free Recovery of Interrupted DC Arcs,” Proc. Inst. Elec. Engrs., Vol. 113, No. 4, April 1966, p. 717.

“Theory of the Non-Stationary Arc Column,” Brit. J. Appl. Physics, 18, 65, 1967.

“Time Constants for Nonstationary Plasmas,” 8th Symp. on Engineering Aspects of Magnetohydrodynamics, March 1967, Stanford, California.

“Radial Convection in the Nonstationary Arc,” 8th Int'l. Conf. on Phenomena in Ionized Gases, Aug. 1967, Vienna.

“Time Constants for Nonstationary Arcs,” Zeitschrift fur Physik, 211, 113-131 (1968).

“Dynamic Response of Arcs,” Invited paper for IEEE Winter Power Meeting, Jan. 1968, New York

Curriculum Vitae of Richard L. Phillips, Ph.D.

“Application of a Graphic Display Terminal to Engineering Laboratory Courses,” with D.E. Geister, Proc. 8th UAIDE Meeting, Nov. 1969, Coronado, California.

“Production of Computer Animated Films from a Remote Storage Tube Terminal,” with D.E. Geister, Proc. First Conf. on Computers in Undergraduate Curricula, June 1970, University of Iowa, Iowa City.

“Online Graphical Data Reduction for Undergraduate Engineering Laboratories,” with D.E. Geister, loc. cit.

“Induced Radial Velocity in Nonstationary Electric Arcs,” invited paper in special issue of Proc. IEEE, 59, 4, 466-473, April 1971.

“Unsteady Phenomena in a Circuit Breaker Nozzle,” with J. Novak, 3rd Arc Symposium/24th Gaseous Electronics Conf., Gainesville, FL., Oct, 1971.

“Interactive Graphic Display of Water Resource Data,” (with co-authors), 2nd IGU/UNESCO Symposium on Geographic Information Systems, Ottawa, Canada, Aug. 1972.

“Production of Computer Animated Films from a Time Shared Graphics Terminal,” with co-authors, Int'l Computing Symposium, Venice, Italy, April 1972.

“Computer Graphics Techniques in Water Quality Control,” with D.E. Geister, Annual Meeting of the Michigan Water Pollution Control Assn., Boyne Mountain, MI., June 1972.

“Interactive Graphics for Water Quality Management,” with D.E. Geister, 11th UAIDE Symposium, Aug. 1972, Lake Geneva, Wisconsin.

“Conductance Time Constant Measurement on an Atmospheric Pressure Cascade Arc,” with R.W. Anderson, 4th Arc Symposium/25th Gaseous Electronics Conf., London, Ont., Oct., 1972.

“Interactive Graphics in Water Quality Investigations,” with D.E. Geister, Proceedings of the ACM Annual Meeting, Aug. 1973, Atlanta, GA.

“Interactive Mapping for Environmental Systems,” Joint Tech. Conf. of American Congress of Surveying and Mapping and American Photogrammetric Society, Oct. 1973, Orlando, FL.

“Electrical Conductance Time Constants for Freely Decaying Arcs,” with R.W. Anderson, Zeit. fur Physik, 264, 1-14, (1973).

“Computer Graphics in Urban and Environmental Systems,” invited review paper in special issue of Proc. IEEE, April 1974.

Curriculum Vitae of Richard L. Phillips, Ph.D.

“Photographic, Pressure, and Voltage Measurements on an Arc Burning Coaxially in a Supersonic Nozzle,” with co-author, Joint AIAA/ASME Conf. on Plasma Properties and Plasma Heat Transfer, July 1974, Boston.

Invited speaker at Second National Symposium on Computerized Structural Analysis and Design, “Software for Computer Graphics Applications,” George Washington Univ., Mar. 29, 1976.

Invited speaker at Third ICASE Conference on Scientific Computing, “Software Tools for Computer Graphics,” Williamsburg, Va., April 2, 1976.

“New Graphical and Statistical Techniques for Analyzing Water Quality Data,” with S. Buda, American Chemical Society Meeting, New York, April 8, 1976.

“An Interactive System for Time Series Analysis and Display of Water Quality Data,” with co-authors, EPA Conference on Environmental Modeling and Simulation, Cincinnati, Ohio, April 22, 1976.

“A Specialized Programming Language for Analysis and Display of Water Quality Data,” with G.N. Cederquist, Fifth International CODATA Conference, Boulder, Colo., June 28, 1976.

“Tools for Computer Graphics Applications,” invited paper at Society of Engineering Science, Inc., 13th Annual Meeting, Nov. 1-3, 1976, Hampton, VA.

Featured in “Neither Laggard nor Wearied,” a 30-minute TV program on computers in the “Future Without Shock” series for the University of Michigan College of Engineering, 1977.

“A Query Language for a Network Database with Graphical Entities,” presented at the 4th Annual SIGGRAPH (ACM) Conference on Computer Graphics, San Jose, CA, July 1977.

Invited speaker at AUTO-CARTO III on “Data Base Management of Geographical Entities,” San Francisco, Jan. 1978.

Invited speaker at 11th Symposium on the Interface of Computer Science and Statistics, “A New System for Water Quality Analysis,” Raleigh, N.C., March 1978.
“Management of Off-Shore Oil Leases,” USGS Symposium, Reston, VA, March 1978.

“Distributed Processing on a Personal Computer,” Proceedings, National Computer Conference, June 1979, New York, NY.

Invited paper, “Definition and Manipulation of Graphical Entities in Geographic Information Systems,” IBM International Conference on Data Base Techniques for Pictorial Applications, Florence, Italy, June 1979.

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“Computer Graphics in Productivity Programs,” 6th University of Michigan Seminar on Productivity, Traverse City, MI., July 30, 1979.

“Cartography and Personal Computers,” Auto-Carto IV, Reston, VA, November 1979.

“Teaching Computer Graphics with a Cluster of Apples,” T.H.E. Journal, February 1980.

Featured in article in Production Magazine, “Those Amazing Computer Graphics Systems,” March 1980.

“Serious Graphics on a Personal Computer,” Engineering Society of Detroit, Computer Graphics Conference, April 1980.

Invited speaker at General Motors Corporation Worldwide Symposium on Computer Graphics, September 28, 1981.

Invited speaker at Second Annual NCGA Conference on “Computer Graphics in Engineering Education,” Anaheim, CA, May 1982.

Featured speaker at Electronic Data Systems Emerging Technology Series symposium, November 1984.

MacApollo, a low-cost, high-performance workstation system, Apollo DOMAIN User's Society meeting, Atlanta, GA, February 1985.

A Bridge from Full-function to Reduced-function Workstations, with co-authors, 1st IEEE Conference on Computer Workstations, San Jose, CA, November, 1985.

Invited speaker at Fourth RPI Symposium on Computer Graphics and Computer Aided Design, Albany, NY, December 1985.

A Bridge from Full-function to Reduced-function Workstations, with co-authors, IEEE Computer Graphics & Applications, May 1986.

A User Perspective on Computer Workstation Integration, with D. E. Atkins, IEEE Transactions on Circuits and Devices, July 1986.

Using the NeWS Window System in a Cray Environment, with D. W. Forslund, Proc. Cray User's Group Meeting, New York, 1987.

A Scientific Visualization Workbench, Proc. Supercomputing'88, November 1988, Orlando, FL.

Distributed Visualization at Los Alamos National Laboratory, Computer, August 1989, pp 70-77.

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Image manipulation in the SIGGRAPH Interactive Proceedings, SPIE/SPSE Conference on Image Communications and Workstations, February 1990.

An Interpersonal Multimedia Visualization System, IEEE Computer Graphics & Applications, May 1991.

MediaView: A General Multimedia Digital Publication System, Comm. ACM, Vol. 34, No. 7, July 1991.

MediaView: An Editable Multimedia Publishing System Developed with an Object-Oriented Toolkit, Proc. USENIX Summer Conf., Nashville, June 1991.

“Opportunities for Multimedia in Education,” in S. Cunningham and R. Hubbard, *Interactive Learning Through Visualization*, Springer-Verlag, Berlin, 1992, 25 - 35.

“A Fast and Accurate Light Reflection Model,” with X. He, P. Heynen, K. Torrance, D. Salesin, D. Greenberg, SIGGRAPH'92, 253-254.

Introduction to Computer Graphics, with J. Foley, A. van Dam, S. Feiner, J Hughes, Addison-Wesley, Reading, MA, 1994.

“A Network-based Distributed, Media-rich Computing and Information Environment,” in *Digital Media and Electronic Publishing*, Academic Press, Ltd. 1996, 91-103

“Experiences with a Distributed Virtual Patient Record System,” with co-authors, 1996 Fall Symposium of The American Medical Informatics Association, October 1996, Washington, DC.

“The TeleMed Project: Improving Patient Care with Java,” with co-authors, Chapter 8 of “Java for Business” Van Nostrand Reinhold, New York, NY, 1997.

“Computer Graphics in Court: The Adobe/Quantel Case,” SIGGRAPH 25th Conference Celebration, Computer Graphics, Vol. 32, No. 3, August 1998.

Professional Associations and Achievements

- Member, Association for Computing Machinery
- Member, IEEE Computer Society
- Member, SIGGRAPH