

Dr. Masullo (2011)

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Experience:

inViVo Vision, Inc., New Canaan, Connecticut.

Founder and President, 2002 to present:

- Founded and organized a research and solutions start-up technology company to focus on services and applications in the physical, engineering, life and social sciences, with the goal of providing an outlet for women and minority scientists, engineers and researchers to lead their own projects in an intellectually nurturing environment focused on internal and external mentoring of professionals and students. Other ongoing responsibilities are listed below.
- Developed intellectual property for inViVo Vision in collaboration with a selected group of industry and university business partners.
- Produced the necessary peer-reviewed publications in support of inViVo Vision solutions. Reserve methods patents to build the intellectual property portfolio of inViVo Vision to help launch the inViVo Vision suit of products and solutions.
- Built necessary start-up relationships with government, academic and industry partners. to help launch the inViVo Vision suit of products and solutions.
- Presented inViVo Vision solutions at national and international world-class venues.
- Evaluated numerous proposals for the National Science Foundation (NSF).

National Action Council for Minorities in Engineering (NACME), New York, New York.

January of 1998 to December of 1999, two year executive-on-loan assignment from IBM Research as Director, Educational Technology:

- Envisioned and developed the technical and business basis to provide advanced commercial and educational solutions for various minority engineering and mentoring programs.
- Designed a solution for alternative assessment based on advanced data mining technologies, meant to identify talent in students that are currently by-passed by standard assessment tools.
- Defined the requirements for various technical and academic publications associated with NACME's work of 25 years of education and research in a new NACME Research and Development Journal and a book.
- Served as editor at large of the NACME issue: *Celebrating Minority Engineering, of the IBM Journal of Research and Development*, 2000.
- Taught engineering candidates at Drexel University and the University of Texas at Houston.

IBM T. J. Watson Research Center, Yorktown Heights & Hawthorne, New York.

March of 1985 to retirement in May of 2003, Senior Scientist:

- Senior member of the IBM Research team responsible for creating, promoting, and reviewing IBM's industry leading inventions in educational, communications and multimedia technologies.
- IBM Research member of the technical steering committees for university technology strategy at Marist College, the University of Michigan, the University of Nebraska and many other IBM academic customers.
- Taught numerous IBM IEC (IBM Education Center) seminars and courses worldwide.
- Co-designed an interactive Internet/Web broadcast system that does not require a return channel, as an equity access solution for geographically remote users, suitable for deployment in developing nations.
- Introduced the concept of Policy Management for technology (systems and software management) and non-technology (social science) applications and problems. Developed the essential elements of the concept of policy management for e-commerce.

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- Developed and promoted solution architectures, designs, and requirements gathering for expert systems and object oriented systems for IBM network and large systems management applications and solutions.
- Director of the *EduPort Project*, the first networked media on-demand for education pilot (five years ahead of uses of the Internet and the Web in education (academia or schools). The first interactive networked digital library for K-12 education to run in a real-time network and to include digital video. This project was ten years ahead of its time and continues to be recognized as the most advanced demonstration to date of advanced digital and network technologies in education.
- Designed the first systems and communications infrastructure for educational curriculum access and assessment, first described and published as her Ph.D. thesis, the *Experimental Educational Environment*.
- Managed a large team of Ph.D. researchers, engineers, software developers and co-op students worldwide to create leading edge solutions for IBM academic systems based on EEE and EduPort.
- Designed the systems architecture for the software backbone of Project 2061 of the American Association for the Advancement of Science.
- Co-designed and co-developed a resource object data manager), the first object oriented in-memory cache for large-scale databases.
- Co-designed and co-developed YES-L/1 (the Yorktown expert systems language 1), the first production (expert) systems language for scale computing and large and complex problems.
- Co-designed and co-developed of YES-MVS (Yorktown expert system for multiple virtual storage operating systems), the first large-scale artificial intelligence (production) expert system.
- Co-designer and co-developer of KnowledgeTool, a general-purpose programming language for intelligent systems and IBM Program Product for special customers and applications.

NYNEX (Verizon), New York, New York.

August of 1968 to March of 1985, Senior Manager, Information Systems Organization:

- Senior manager in charge of the statewide software update system and responsible for the management of a large department and large distributed staff.
- Introduced NYNEX to artificial intelligence and expert systems technologies for knowledge engineering in workforce reduction without loss of talent.
- Led and managed a cross-functional development and marketing team to drive new generations of software products with a then emerging marketplace oriented focus; maintained existing products to revitalize internal (inter-departmental) customers; created new internal customers (i.e., bringing new corporate areas to implement technology solutions); and ran the product maintenance process for the (internal) technology acquisition operation.
- Made significant engineering contributions, including crisis management for civil service response and state communications network outage response systems for cable failure command and control, technical support in an emerging computing environment.
- Developed a very early system for executive reports production, based on natural language oriented syntax, to automatically generate SAS reports (statistical analysis system) from existing internal SAS databases.
- Designed and developed a system called PRODUCTS for automatic updates via the network of remote software "libraries" (i.e., computer file systems) across all NYNEX production systems (i.e., mainframe computing centers) in New York State. This solution was in a class similar to what we now know as the Internet/Web solutions.
- Designed and executed the first and most successful ESS (electronic switching system) Cutover in the history of the telecommunications industry.

Academic Activities:

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- Taught numerous undergraduate, graduate and doctoral program courses online, hybrid/blended and face to face; has mentored numerous doctoral candidates and served on numerous dissertation committees; reviewed numerous publications and textbooks.
- Course she has taught and/or developed courseware include:
 - Business Intelligence
 - Computer Architecture
 - Computer Animation
 - Courseware Design For Training and Learning
 - Database Analysis and Design
 - Digital Audio and Imaging
 - Emerging Technologies
 - E-Business Principles and Practice
 - E-Commerce
 - Higher Order Thinking
 - Information and Communications Systems
 - Information and Knowledge Management
 - Information Systems Management
 - Infrastructure Development
 - Innovation in Business and Science
 - Instructional Applications of the Internet
 - Management of Information Systems
 - Management of IT Projects
 - Management of Technological Innovation
 - Project Management
 - Process Management
 - Programming Languages
 - Quantitative Analysis
 - Software Engineering
 - Statistics (at all levels)
 - Technology Industry Assessment
 - Telecommunications (at all levels)
 - Web Programming
 - Wireless and Cellular Communications

Education:

- City University of New York, The City University Graduate Center, New York, NY., Ph.D. in Computer Science, 1991.
- City University of New York, The City University Graduate Center, New York City, NY., Master of Science in Engineering, 1985.
- City University of New York, The City University Graduate Center, New York City, NY., Master of Philosophy, 1985.
- City College of the City University of New York, New York City, Bachelor of Arts in English, Architecture and Engineering Science, 1973.

Summary of Accomplishments:

- Appointed by the President of the National Academy of Science to the five-member Oversight Committee for the Improving Learning with Information Technologies Committee of the National Academy of Sciences, Washington, DC., to guide the work of hundreds of scientists and researchers to produce a national report and the formation of a new standing board of the Academy.
- Co-chair of the first National Academy of Science Conference on Improving Learning with Information Technology.
- Member of the Board of Advisors of the School of Engineering, City College of New York, NY.
- Member of the Board of Directors, Mount Saint Michael High School, Bronx, NY.

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- Member of the Board of Advisors, The National Peace Garden (Monument) Foundation, Washington, DC.
- Member of The Mathematical Sciences Education Board of the National Academy of Sciences, an Advisory Board of the National Research Council, Washington, DC.
- Member of the Experts Group of the Council of Competitiveness, Washington, DC.
- Advisor to Rice High School, New York, NY.
- Member of the National Research Council Committee on pre-college and undergraduate digital libraries for math, science and technology and co-author of two NRC reports on the subject.
- Member of the New York State Education Department Math, Science and Technology Committee on Curriculum, Standards and Assessment, Albany, NY.
- Member of ad hoc steering committees for university technology strategies at Marist College, the University of Michigan, the University of Nebraska, the Korean Open University, and other institutions.
- Member of the Board of Directors, Discovery Museum, Bridgeport, Connecticut.
- Advisor to Reach and Teach in South Africa to develop education technology strategies.
- Advisor to the American Association for the Advancement of Science (AAAS), Project 2061.
- Author of a landmark paper entitled A Universal and Global Education Infrastructure, featured in *UNESCO: 50 Years in Education*, a book and CD distributed to ministers of education worldwide.
- Author and editor of the *EduPort Newsletter*, at the University of Nebraska in Lincoln, recognized as the first electronic newsletter on digital libraries and infrastructure for education with broad worldwide circulation.
- Proposed and co-chaired the First IEEE Policy Management Conference held at UCLA.
- Chair of The First Workshop on the Role of Home Technologies in Education, 1998, sponsored by the Connecticut Academy of Education.
- Chair of The First Conference on Digital Libraries in Education, 1993, sponsored by NASA Goddard Space Flight Center. Conducted workshops on the topic that were sponsored by various academic organizations.
- Chair of the First Workshop on Internet Access for Education in Developing Nations, 1997, UNESCO Headquarters, Paris. Coordinated the effort to bring the UNESCO Web site to the University of Nebraska.
- Keynote speaker at numerous seminars and workshops in national and international forums on various academic and technical topics, this included professional organizations such as the AAAS, ACM, AACE, CATE, EDUCAUSE, ICTE, IEEE, NECC, SALT, SITE, SIGGRAPH, STATE, and others; and national and international government and industry organizations such as IBM, NACME, the OECD, the US Department of Education, the US Department of Commerce, the US Department of State, NASA, NIST, UNESCO, etc.
- Honored as Business Educator of the Year by the City University of New York Education Alumni Association. In 1997; as Outstanding Woman Who Makes a Difference by US Black Engineering and US Hispanic Engineer, in 1998; and with the prestigious Townsend Harris Medal by the City College of New York "for contributions to society in a chosen field of work," in 2000.
- Cited in WHO's WHO American Millennium, WHO's WHO in Science and Engineering, WHO's WHO of American Women in Science, WHO's WHO of American Women and the International WHO's WHO in Distance Learning.
- Nominated by an IBM Fellow to the IBM Academy of Technology in 2002.

Partial List of Publications:

Masullo, M.J., *Statistical Research Instruction in a Blended Course Environment*, United States Conference On Teaching Statistics, Ohio State University, Columbus, Ohio, June 2009.

Masullo, M.J., Tsantis, L., Criscenti, D., *Driving Skills For Life – DSFL: An Online Courseware Program To Save Lives*, ED-MEDIA 2009-World Conference on Educational Multimedia, Hypermedia & Telecommunications, Honolulu, Hawaii, June 2009.

Masullo, M.J., Tsantis, L., *Decision Skills Training for Saving Lives*, Art and Science in Simulation Based Training: Learning, Arts and the Brain Summit, Johns Hopkins University, May 2009.

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Masullo, M.J., Tsantis, L., Glass, A., *Competency-Based Training + Agile Learning in a Simulated Training*, Society for Applied Learning Technology, SALT'07, Arlington, Virginia, August 2007.

Masullo, M.J., Glass, A., Tsantis, L., *Strategic Training: Competency-based Training + Agile Learning = 100% Mastery*, Society for Applied Learning Technology, SALT'07, Washington, D.C., August 2007.

Masullo, M.J., Tsantis, L., *An IT Framework to Support Systemic Agile Learning*, Athens Institute for Education and Research, International Conference on Education, Athens, Greece, May 2006.

Masullo, M.J., Tsantis, L., *Designing a Mobile Education and Learning Infrastructure as a Component of National Preparedness*, Society for Applied Learning Technology, SALT'06, Orlando, Florida, February 2006.

Masullo, M.J., Messier, P., Tsantis, L., Criscenti, D., *Agile Learning for Agile Manufacturing: An e-Learning Model*, Society for Applied Learning Technology, SALT'05, Washington, D.C., August 2005.

Masullo, M.J., Moreno, W., Tsantis, L., *An Anatomy of the International ICT Divide*, Third International Conference on Education and Information Systems, EISTE'05, Orlando, Florida, July 2005.

Masullo, M.J., et al, *A Framework for the Maintenance and Evolution of ePolicy-Guided Web Applications*, Institute for Operations Research and the Management Sciences, Vienna, Austria, July 2005.

Masullo, M.J., Tsantis, L., *e-Mentoring as a New Paradigm for Learning*, Athens Institute for Education and Research, International Conference on Education, Athens, Greece, May 2004.

Masullo, M.J., Tsantis, L., *Self-e-Mentoring: A New Paradigm for In-service Teacher Education*, SITE 2004, Atlanta, Georgia, March 2004.

Masullo, M.J., *From Black Box to Crystal Ball*, HEAnet, National Networking Conference, Kilkenny, Ireland, November 2003.

Masullo, M.J., et al, *Planning for Two Transformations in Education and Learning Technology*, Report of the Improving Learning with Information Technology Committee, National Academy of Science, Washington, D.C., 2003.

Masullo, M.J., *Education and the Digital Divide*, Harvard Law School, Cambridge, Massachusetts, April 2003.

Masullo, M.J., *Report of Symposium on Improving Learning with Information Technology*, National Academy of Science, Washington, D.C., January 2001.

Masullo, M.J., Ruiz, A., *e-Quality*, New Horizons for Learning, Online Magazine, 2000.

Masullo, M.J., Ruiz, A., *People Are the Only Thing that Matter*, New Horizons for Learning, Online Magazine, 2000.

Masullo, M.J. et al, *Serving the Needs of Pre-College Science and Mathematics Education: Impact of a Digital National Library on Teacher Education and Practice*, Proceedings from a National Research Council Workshop, Executive Committee Report, Mathematical Sciences Education Board, National Research Council, National Academy of Science, Washington D.C., 1999.

Masullo, M.J., McMullen, B., Postlethwaite, B., *Digital Libraries: Potential and Risks*, EDUCAUSE, Long Beach, California, October 1999.

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Masullo, M.J., Tsantis, L., *Challenges in Educational Technology: Minority Engineering*, NASA GSFC, CESDIS Workshop, October 1999.

Abensour, D., Kaplan, J., Masullo, M.J., Peters, L., Ramirez, R., Ruiz, A., Withrow, F., *On the Need for Realistically Scaleable Educational Technology*, SALT '99, Arlington, Virginia, July 1999.

Masullo, M.J., *The Digital Library Concept*, Tenth University-Wide Conference of Teaching & Faculty Development, Tufts University, Grafton, Massachusetts, May 1999.

Masullo, M.J., *Discovering the Academic Potential of Our Children*, NACME Forum'98, Arlington, Virginia, October 1998, (Published by the On-Line Decision Support Journal.)

Masullo, M.J., et al, *Digital Libraries in K-12 Education*, ACM DL'98 Workshop, Pittsburgh, Pennsylvania, June 1998.

Masullo, M.J., et al, *The Role of Home Technologies in Education*, A Workshop on the Role of Home Technologies in Education, Rensselaer at Hartford, Hartford, Connecticut, June 1998.

Masullo, M.J., Chernock, R., Hisham, E., *Equitable Access to Educational Resources: Comparing Possible Solutions*, Conference on Educational Telecommunications, ED-TELECOM '98, Freiburg, Germany, June 1998.

Masullo, M.J., *Challenging the Meaning of Information Technology*, ICTE, Santa Fe, New Mexico, March 1998.

Masullo, M.J., et al, *Infusing Web Content with Educationally Relevant Indices*, WebNet, Toronto, Canada, November 1997.

Masullo, M.J., *User Scenarios for Equity Access to Educational Resources*, NACME Forum, Seattle, Washington, October 1997.

Masullo, M.J., et al, *The Role and Value of a Digital National Library for Undergraduate SME&T Education*, National Proceedings from a National Research Council Workshop, National Academy of Science, Washington, D.C., August 1997.

Masullo, M.J., Hisham, E., Ruiz, A., *A Regional Broadcast-Centric Education System*, IEEE Symposium on Computers and Communications, Alexandria, Egypt, July 1997.

Mack, R., Masullo, M.J., Meyers, J., *Educational Multimedia: Perspective in Evolution*, Conference on Educational Telecommunications, ED-TELECOM '97, Calgary, Canada, June 1997.

Emal, J., Masullo, M.J., Ruiz, A., *DBS-Based Education and the Role of the Teacher*, UNESCO, UK Open University International Colloquium, Virtual Learning Environments and the Role of the Teacher, Milton Keynes, UK, April 1997.

Masullo, M.J., *Roles for Digital Libraries in K-12 Education*, D-Lib Magazine, September 1996.

Ruiz, A., Masullo, M.J., *A Universal and Global Education Infrastructure*, United Nations Educational, Scientific and Cultural Organization, UNESCO World Congress, Moscow, Russia, July 1996.

Masullo, M.J., *Infrastructure, Education and Digital Libraries*, Conference on Computers and Advanced Technology in Education, CATE '96, Cairo, Egypt, March 1996.

Masullo, M.J., Emal, J., *A Digital Video Library Project for Teaching and Learning*, D-Lib Magazine, ISSN 1082-9873, January 1996.

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Masullo, M.J., Brown, D., *Pioneering Video-On-Demand Projects in K-12 Education*, International Symposium on Digital Libraries, Ibaraki, Japan, August 1995.

Masullo, M.J., Wolf, K., *Video-On-Demand for Teachers and Students*, International Joint Conference on Artificial Intelligence, Montreal, Canada, August 1995.

Masullo, M.J., Tsantis, L., *Putting Digital Libraries to Work for Education*, OECD-KISDI Joint Conference on Information Infrastructure, Seoul, Korea, April 1995.

Masullo, M.J., *Incorporating New Paradigms in Distance Learning*, Conference on Information and Knowledge Management, CIKM'94, Gaithersburg, Maryland, November 1994.

Masullo, M.J., Tsantis, L., *A Networked Education Infrastructure*, Breaking the Barriers of the National Information Infrastructure, Washington, D.C., September 1994.

Masullo, M.J., *Digital Libraries in K-12 education*, Workshop on Digital Libraries: Current Issues, Rutgers University, Newark, New Jersey, May 1994.

Masullo, M.J., Nguyen, T., *Networked Access to Digital Libraries in K-12 Education*, Society for Technology and Teacher education Conference, STATE '94, Washington, D.C., January 1994.

Masullo, M.J., Ramirez, R., et al, *First Workshop on the Role of Digital Libraries in K-12 Education*, Conference on Information and Knowledge Management, CIKM'93, Washington, D.C., November 1993.

Masullo, M.J., et al, *A Prototype Digital Museum and Science Center*, Association of Science and Technology Centers, ASTC'93, Columbus, Ohio, October 1993.

Masullo, M.J., et al, *Multimedia On-demand*, SIGGRAPH'93, Anaheim, California, August 1993.

Masullo, M.J., et al, *Project 2061: Multimedia Curriculum Blocks*, UNESCO Conference on Education 2000, Paris, France, July 1993.

Masullo, M.J., et al, *Multimedia On-demand and the Organization of Education Systems*, Proceedings of IFIP Conference on University Uses of Visualization in Scientific Computing, IFIP WG 3.2, University of California at Irvine, Irvine, California, July 1993.

Masullo, M.J., et al, *The Technology is Now: Multimedia On-demand*, Governors' Conference, Arkansas, Louisiana and Mississippi Mathematics and Science Education 2000, New Orleans, Louisiana, July of 1993.

Masullo, M.J. et al, *RHINO: Designing Multimedia Curriculum Blocks*, Educational Multimedia and Hypermedia, ED-MEDIA 93, Orlando, Florida, June 1993.

Masullo, M.J., et al, *RHINO: Creating Learning Experiences, an Overview*, Proceedings of the National Education Computing Conference, NECC-93, Orlando, Florida, June 1993.

Masullo, M.J. et al, *Multimedia Server Technology and its Application to Education*, NASA Goddard Space Flight Center Seminar, Greenbelt, Maryland, June 1993.

Masullo, M.J., et al, *The Technology is Now: Multimedia On-demand*, Proceedings of Reinventing the Schools: The Technology is Now, A Convocation by the National Academy of Sciences. National Academy of Sciences, Washington D.C., May 1993.

Masullo, M.J., Calo, S., *Policy Management: An Architecture and Approach*, Proceedings of the First International Workshop on Systems Management, IEEE, Los Angeles, California, April 1993.

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Masullo, M.J., *RHINO: A Curriculum Support System, Creating Learning Experiences*, IBM Research Report, RC 18096, 1992.

Masullo, M.J., Calo, S., *Policy Management*, SHARE 79.5, Tampa, Florida, 1992.

Masullo, M.J., *An Exploratory Educational Environment for Computer Supported Education*, IBM Research Report, RC 16662, 1991.

Masullo, M.J., Mozes, E., *A Methods Specification Language for Object Oriented Databases*, IBM Research Report, RC 16360, 1990.

Masullo, M.J., Ennis, R., *An Experimental Educational Environment*, Proceedings of the ITL Conference on Expert Systems, IBM Expert Systems ITL, San Jose, California, 1989.

Masullo, M.J., Sjolund, M., *Computers and Handicapped Children: AI and LEKOTEK's COMPUPLAY*, IBM Research Report, RC 13905, 1988.

Cruise, A., Ennis, R., Finkel, A., Hellerstein, J., Klein, D., Loeb, D., Masullo, M.J., Milliken, K., van Woerkom, H., Waite, N., *YES/L1: Integrating Rule Based, Procedural and Real-Time Programming for Industrial Applications*, Proceedings of the Third Conference on Artificial Intelligence Applications, IEEE, Kissimmee, Florida, 1987.

Chou, C., Cruise, A., Ennis, R., Finkel, A., Hellerstein, J., Loeb, D., Klein, D., Masullo, M.J., Milliken, K., van Woerkom, H., Waite, N., *Improved RETE Pattern Matching*, Proceedings of the ITL Conference on Expert Systems, IBM Expert Systems ITL, New York, New York, 1986.

Cruise, A., Ennis, R., Finkel, A., Hellerstein, J., Klein, D., Loeb, D., Masullo, M.J., Milliken, K., van Woerkom, H., Waite, N., *YES/MVS and the Automation of Operations for Large Computer Complexes*, IBM Systems Journal, 1986.

Milliken, K., Cruise, A., Ennis, R., Finkel, A., Hellerstein, J., Klein, D., Loeb, D., Masullo, M.J., van Woerkom, H., Waite, N., *Isolating Functionality in a Real Time Expert System*, IBM Research Report RC 12318, 1986.

Klein, D., Cruise, A., Ennis, R., Finkel, A., Hellerstein, J., Loeb, D., Masullo, M.J., van Woerkom, H., Waite, N., *YES/L1: Integrating Expert System Technology with Traditional Programming Languages*, IBM Research Report, RC 12316, 1986.

Cruise, A., Ennis, R., Hellerstein, J., Milliken, K., Masullo, M.J., Rosenbloom, M., van Woerkom, H., *A Language for Implementing Real-Time Expert Systems*, IBM Research Report, RC 11500, 1985.