

JANE MACFARLANE, PhD
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Multifaceted leader with a successful history of building and leading multi-disciplinary, advanced technology teams. Unique history of analyzing and structuring solutions for highly complex systems. Defines the technology vision and engages professionals to achieve the vision. Inspires team creativity by working in a hands-on way with team members. Effective communicator of technology goals in context of the business strategy. Over 30 years of experience in technology, including over 10 years in the DOE National Laboratories leading research and development.

Integrating Technology with Business Process • Strategic Planning • Manufacturing Processes
Technology Planning • Scientific Problem Analysis • Software Frameworks and Architectures
Intelligent Systems • Web Application Development • Ruby on Rails • Agile Development
Data Mining • Algorithm Design • Telematics • Supply Chain Management • Geospatial Data

PROFESSIONAL EXPERIENCE

INDEPENDENT CONSULTANT, Oakland, CA • 2007 – present

IMARA CORPORATION, Menlo Park, CA **Vice President, Process Management**

Initiated a turn-around of manufacturing operations. Created process maps for domestic electrode manufacturing. Implemented improved procedures for operations, including an improved traveler system for tracking manufacturing processes. Significantly improved manufacturing processes for mixing, coating, calendaring and slitting.

Designed and implemented a cell inventory and cell analytics system.

Developed a dynamic simulation for predicting factory production capabilities and predicting factory growth requirements as a function of forecasted sales.

Created process maps for internal and outsourced assembly manufacturing. Created task groups for harmonizing the assembly process in the outsourced manufacturing environment.

Led a team to create Imara's \$74 million proposal for the DOE Electric Drive Vehicle Initiative.

Tele Atlas, Lebanon, NH

Led the design of an application for Tele Atlas – a geospatial company - that transforms the traditional data acquisition process to include feeds from mobile devices and community input via the web. Results were used by the VP of Global Engineering to drive future software production technologies.

Evaluated a core Tele Atlas software development effort, using agile methodologies, that was late and over budget. This included examining the business process that the software development project was designed to support. Project management was advised to reorganize the management and define an appropriate testing plan for evaluating project status. The evaluation conclusions and initial testing results ultimately led to a decision to cancel the project.

Acted as an intermediary between project management at Tele Atlas and a third-party that provided a unique predicate logic solution for examining data quality. This required eliminating

initial strains among management and engineers and helping engineers rethink some of their fundamental structures for representing quality. The project successfully delivered a quality production solution with the new software.

SUMMIT LIFE SYSTEMS, Oakland, CA • 2004 – 2007

Chief Technology Officer

Architected and led the development of a web-based, expert system for designing custom exercise prescriptions. Organized and managed a global development team to deliver supporting business applications. The custom exercise program was successfully delivered to the US Navy Seals.

INDEPENDENT CONSULTANT, Oakland, CA • 2003 – 2004

Developed a business strategy for two small technology startups: a company focused on inertial sensor integration using micro electromechanical systems and solid-state sensors, and company that offered a rule-based returns management product.

ONSTAR / GENERAL MOTORS, Redwood Shores, CA • 1999 – 2003

Director, Advanced Technology Planning

Executive level responsibility for identifying business models that advanced the business strategy for OnStar. Communicated business needs to technology vendors to create viable partnerships for future development efforts. Represented OnStar through speaking engagements.

Developed next-generation technology plans for OnStar. This involved evaluating and integrating a variety of technologies, including: ad-hoc networking for mobile network design, voice recognition technologies, and web portal integration. Lead architect for all projects. Co-authored 8 patents in the areas of signal processing, application algorithms, and device design.

Established the Advanced Technology office in California. This included: opening a new office, recruiting and managing new staff members, establishing a high technology image in Silicon Valley, and establishing communication processes with corporate headquarters.

GENERAL MOTORS, Detroit, MI • 1998 - 1999

Director, Business Process Engineering

Introduced and developed business process maps for the production order management and logistics systems for all of the North American vehicle production processes. This work provided a top-down view of the processes and information systems that support the entire order-to-delivery process. It was used to:

- Identify opportunities for introducing external software solutions,
- Provide the context for integration with existing legacy systems,
- Develop a software migration strategy, and
- Estimate project cost and time for software implementation.

Developed business process maps for the production order management and logistics systems for a new vehicle distribution process. Identified opportunities to use technology to improve customer experience and sales lift for vehicle programs. Used sales, production, and distribution data to provide an analytical view of the impact of marketing, scheduling and sales and guided work efforts in the Research and Development Division.

AT&T SOLUTIONS, San Francisco, CA • 1997 - 1998

Consultant

Led a team at a large computer manufacturer on how to use an in-house product to manage their retail supply business processes. Key processes in the North American channel logistics fulfillment organization were identified and mapped. A very large unnecessary expense in the process was uncovered and corrected as a result of this work.

Conducted a quantitative analysis of replenishment activities for a major retailer using dynamic simulation. This led to significant changes in the corporate replenishment policies.

BERKELEY NATIONAL LABORATORY, Berkeley, CA • 1990-1996

Group Leader, Software Technologies and Applications

The Software Technologies and Applications Group was a multi-disciplinary group of 11 research scientists composed of physicists, biochemists, computing scientists and engineers. Responsible for writing proposals, directing research efforts and representing and promoting research work in design reviews.

Managed Enterprise Modeling and Simulation Task for the Amtex Project. Responsible for approximately \$7 million dollars of laboratory effort per year across three national laboratories. Three product line investigations were completed that mapped business and operational processes across a multi-company value chain, including all operations from fiber to consumer product. Led the design of a framework that captured the knowledge gained through the product line investigations. Led the design and development of a dynamic simulation capability that allowed the user to create custom value chain structures and predict profitability of decision policies. The vision of this effort was to provide a decision-based framework for electronic commerce networks using agent-based technology.

Managed the software development for a system that enables a site manager to determine the optimum remediation strategy for environmental cleanup. This interdisciplinary project integrated chemical transport, exposure, and biological risk assessment codes to determine risk. An integrated cost model established projected costs of the selected remediation enabling the site manager to choose the strategy that provides the greatest risk reduction for the least cost. Responsible for \$400K of laboratory effort.

Co-investigator of a project to model combustion by incorporating detailed chemistry into models of turbulent reacting flows. The purpose of the project was to examine the interaction of chemistry and turbulence in order to reduce pollution production and increase the efficiency of the combustion process. This involved abstracted modeling schemes for chemical kinetics, automatic code generation, qualitative reasoning about chemical dynamics, automated model reduction, implementations on parallel machines, and data visualization. A high performance computing framework solution called POET: Parallel Object-Oriented Environment and Toolkit was a result of this effort. This software was patented and successfully reused in other projects and domains including Genome Sequencing.

Principal Investigator for Frameworks for Next-Generation Machining and Manufacturing Project. This project was to create a future manufacturing information architecture that integrates and augments the knowledge and data associated with a product description as the product travels through the design-to-manufacture cycle.

INDEPENDENT CONSULTANT, Pleasanton, CA • 1989 - 1990

Sterling Drug Research Division - Developed high-level representations for a chemical experimentation laboratory information system for supporting enzyme kinetics analysis. The system incorporated three aspects of the experimentation process: model development, experiment design and implementation, and system identification. Experiments to verify the resulting model were performed by robotic laboratory equipment.

Lawrence Livermore National Laboratory - Developed proposals for the modernization of manufacturing activities within the DOE complex. Developed a manufacturing technology program for investigating state of the art sensing, control and analysis of precision engineering processes.

HEWLETT PACKARD RESEARCH LABORATORY, Palo Alto, CA • 1989

LAWRENCE LIVERMORE NATIONAL LABORATORY, Livermore, CA • 1984 - 1989

HONEYWELL RESIDENTIAL SYSTEMS, Minneapolis, MN • 1979 - 1980

HUGHES AIRCRAFT, Los Angeles, CA • 1976 - 1979
Advanced Engineering Laboratory, Radar Systems Group

EDUCATION AND CREDENTIALS

PhD, Mechanical Engineering

University of Minnesota, Thesis: Qualitative Analysis of Dynamic Systems

Master of Science Mechanical Engineering

University of Minnesota, Thesis: A Laser Scanning System for Human Gait Analysis

B.A. Math/System Science

University of California, Los Angeles, CA

NextGen CEO Program

Forum for Women Entrepreneurs

Center for Creative Leadership

Stanford Business School Executive Training

eCommerce (speaker and participant)