

# James Long

**Process Automation Engineer - Automated BioProcess Solutions - Mill Valley, CA**

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Willing to relocate: Anywhere

Authorized to work in the US for any employer

## WORK EXPERIENCE

### **Process Automation Engineer**

Automated BioProcess Solutions - Mill Valley, CA - September 2014 to Present

Process automation and Process development consultant. C++ programming. DCS and PLC programming. Chemical Process development consultant. IoT and other controller platform Development.

My resume is at

[www.linkedin.com/in/james-long-1202b219/](http://www.linkedin.com/in/james-long-1202b219/)

### **PRODUCT DEVELOPMENT CONSULTANT, AUTOMATION**

Automation Consultants Group/Cyberonix Inc - January 1996 to Present

Projects: JAVA Controlled Fermentor

Validation Productivity Tool (VPT)

JAVA MES solution, JAVA BATCH Sequencing Engine

Java Automation Controller JAC 10004 (Mitsubitshi Electric)

Chlor-Alkai Project (Rockwell FactoryTalk/ OSI PI)

Job description:

Process control system design services (hardware and software). Process development services:

- BIOLOGICAL / ORGANIC SYSTEMS
- COSMETICS/ INDUSTRIAL CHEMICAL / PETROLEUM / MINING
- Biological production (FERMENTATION, CELL CULTURE, PURIFICATION)
- Real Time Microprocessor instrumentation interface development for controls and MES Development
- New Instrument technology development

### **ASSOCIATE DIRECTOR , AUTOMATION ENGINEERING**

BioMarin, Inc - November 2008 to August 2009

Projects: Engineering Library Inventory and procedures Project

MES Project

Gali Production Expansion Project (Rockwell FactoryTalk)

Waste Neutralization Project

Chromatography Upgrade and Validation Project

Production Network Infrastructure Upgrade Project

### **PRINCIPAL ENGINEER, AUTOMATION ENGINEERING**

Genentech, Inc - January 1995 to November 2008

Projects: CCP2 Automation Lead  
Cell Culture Fermentation Revamp  
Enbrel(TM) Automation Lead  
Large Scale Final Purification Expansion  
TNK Automation/Process Revamp.  
Fermentation Control Systems Project  
tPA upgrade.

Job description:

Lead and group manager/engineer responsible for the development of novel process equipment, evaluation of new instrumentation technologies, process control improvements, engineering standards development, resource planning, and project program management. Responsible for economic analysis, and feasibility of automation/process development projects.

Manager of automation engineers for a new Cell Culture production and Recovery Bio- processing plant. Responsible for DCS system selection, business system interfaces, and supervision of a staff of automation engineers who were in turn responsible for segments of the plant and utilities. Plant design is of a fully electronic batch, work instruction, and lot release capable design.

Lead automation engineer for a project to revamp fourteen production fermenters and associated CIP/SIP operations. Full automatic batch and electronic batch reporting.

Supervisor/Lead for the group of engineers responsible for developing a corporate standard DCS automation library of S88 software modules and the associated engineered document set.

Manager of automation engineers for the transfer of Enbrel production to Genentech from Immunex/Amgen. Production in two fermenter suites and recovery. Revamp of Automation and development of S88 recipes. Responsible for direction to engineering firms and contractors in support of design implementation startup and validation.

Lead automation engineer for a multi-product capable final purification suite. CIP/SIP, process vessels, Chromatography, and Tangential Flow Filtration (TFF) Operations were automated using state of the art, ISA S88.01 Modular Batch Control concepts. Allen-Bradley PLC, RSView, RSBatch, and Windows NT 4.0 were used to create a plant capable of flexible batch production. Software Architecture for Large Scale Final Purification Expansion. This design was awarded ComputerWorld Smithsonian Award 1998, for Manufacturing. Also, the START award for Software Technology in Manufacturing, 1998. This plant currently purifies Rituxan(TM), Herceptin(TM), NGF, E-25, rTRY and several clinical products. Project Lead Engineer for the production purification train for Tenecteplase(TM) this effort included the modification of existing single product dedicated Chromatography and TFF equipment to accommodate multiple products. Revamp include retrofit of Existing equipment with Modular Batch Control software, and improved the consistency of validation between manufacturing areas at Genentech.

Supervisor/Lead Engineer for Corporate Batch Programmable Logic Controller (PLC) strategy team. This team of engineers identified methods to optimize the deployment of batch technology for multi-product systems at Genentech. Engineering Design, Testing, Quality Assurance, and Migration strategies and procedures were formulated by this group under my direction.

Automation Infrastructure Team Lead. Prepared Corporate Specifications for Control Panels, Corporate Standards for Instrumentation, standard project execution procedures, and corporate P&ID nomenclature reference sheets for review and approval by Engineering Management.

Supervisor/Group Leader for the Cell Culture Fermentation Control System Revamps (of 22 fermenters). This system required both GMP manufacturing and Clinical experimentation efforts to be carried out on the same set of equipment. Technology developed here was used to produce standard methods for Batch DCS installations at South San Francisco.

Lead Engineer for Corporate DCS Strategy team. This team of engineers developed corporate policy for issues related to DCS system design and documentation methods under my direction. This group also conducted reviews of systems for 21CFR11 compliance evaluations. This group prepared corporate policy documents on 21CFR11 as they relate to Automated process systems.

### **LEAD PROCESS CONTROL SYSTEMS ENGINEER**

Berlex Biosciences, Inc - June 1992 to February 1996

Projects: Development/Clinical Manufacturing Pilot Plant  
Fermentation Development SCADA Revamp  
Mass Spectrometer Multiplexing Panel  
Mammalian Fermenter Prototype  
Dual Microbial Fermenter Prototype  
Automated Media Blending Skid  
Portable Continuous Sterilizer Skid  
Betaseron(TM) Fermenter Project

Job description:

Lead Engineer and Supervisor for both Process and Control Systems engineers and Fermentation Systems Development. Responsible for prototype work on MIS information infrastructure associated with the MES, SCADA and LIMS Ethernet networks. Developed data mechanisms for plant floor integration with an ORACLE RDBMS backbone. Supervised automation and process engineers and directed contract engineers. Prepared Corporate Automation Policies, and procedures, and standards.

Project Manager directing contractor hardware design of plant automation skids and mechanical equipment. Responsible for all custom software programming of plant Control Systems. Designed custom reactor hardware and software packages for the above systems using SIMATIC PLC hardware, DMACS or TISTAR SCADA software, APT PLC programming software, online dynamic simulation software was programmed using C.

### **PROCESS CONTROL SYSTEMS ENGINEER**

Miles/Cutter Biological, Inc./Bayer AG - August 1989 to June 1992

Projects: Multi-purpose Pilot Plant  
Freeze Dryer 'F' Project  
Fermentation Research and Development Lab  
Miles r-FVIII Kogenate(TM) Production Facility, Project 1866

Job description:

Lead Engineer for Conceptual and detailed automation design for Multi-purpose Pilot plant

Distributed Control Systems. Specified Factory and Site Acceptance Test Procedures for Software and Hardware of Distributed Control Systems. Specified UPS and electrical equipment for plant electrical infrastructures. Responsible for network architecture design of ABB MOD300 DCS systems.

Responsible for field evaluation and modifications to control systems and process equipment. Conducted thermal and chemical performance experiments to ensure adequate and reliable system CIP and SIP performance. Developed custom C code for the data acquisition of these experiments. Also programmed high level sequencing language routines (TCL) for automatic cleaning and sterilization of process equipment and reactors using the ABB MOD300 DCS. Directed contractors responsible for sequence, interlock, and loop configuration modifications.

Lead project engineer for the fermentation development laboratory, utilizing networked PLC to perform control and data acquisition for an array of development fermenters. Directed contractor resources to fabricate and program control and instrumentation stations for fermenters. Directed electrical and instrumentation contractors for building system and utility modifications.

Lead Engineer for Lyophilization suite modification project. Supervised the electrical design along with the HMI and PLC programming efforts for the packaged unit. Developed integrated Instrument index, datasheets, and P&IDs using AutoCAD, and Paradox Database. Prepared Corporate Standards for instrumentation, control panel design, and other Automation topics.

## **PROCESS DEVELOPMENT ENGINEER**

Bio-Response/Baxter - October 1987 to August 1989

Projects: Fermenter Instrumentation Package Design  
Gas Chromatography Auto-Sample Control System  
Automated Liquid Chromatography System  
Aseptic Flow Injection Analyzer for Ammonia

Job description:

Responsible for the design and improvement of mammalian cell culture apparatus and processes. Developed cell culture oxygenation systems leading to two U.S. patents. Developed an online automated aseptic analyzer for previously unusable (aseptically) ion selective electrodes.

Designed and built a plant wide, gas analysis and mixing system. This system was a set of micro-embedded controllers programmed using PASCAL, BASIC, and MAS86 programming environments.

Designed and built a computer based online, harvest conditioning system for direct loading of cell free culture fluid onto HPLC columns.

Designed and built an online control system package for a standalone mammalian cell culture unit. This unit provided redundant measurement and control of pH, pO<sub>2</sub>, recycle flow, perfusion flow, media pre-heat, reactor temperature, gas flows, and gas composition. This unit provided monitoring only for NH<sub>3</sub>.

Received informal machinist training and welding technique instruction on the job.  
Fabricated nearly all of my own experimental equipment using lathe, mill and TIG/MIG welding. Experienced in the machining of polycarbonate, Teflon, and Stainless Steels.

## **PROCESS CONTROL ENGINEER**

Bechtel Petroleum Inc - June 1983 to October 1987

Projects: Kennecott Utah Copper Division Modernization Project

SOHIO Consolidated Engineering Project  
ARCO Cherry Point Coke Calciner Project  
Union Oil Rodeo Refinery Revamp Project

Job description:

Specified and configured computer based Control and Monitoring systems including: FOXBORO Microspec, HONEYWELL TDC2000, and FISHER ProVox Systems.  
Developed dynamic simulations for process control at start-up. Assigned as field start-up engineer, responsible for trouble-shooting loops in the field, and for configuration of DCS/SCADA systems.  
Other responsibilities included the configuration of the DCS/PLC interface and specification of process instrumentation such as control valves, magnetic flowmeters, ultrasonic flowmeters, transmitters, process switches, local annunciators, etc.

Designed loop and logic diagrams using CADD systems such as: AutoCAD, PCAD, and MacDraft. Also developed intelligent P&ID software capable of generating various Control Systems documents using DBASE III, ARTEMIS, and LOTUS 123 Systems.

Prepared control strategies for the following units: WASTE HEAT RECOVERY SYSTEM, FLUE GAS DESULFURIZATION UNIT, WET ELECTROSTATIC PRECIPITATOR SYSTEM, and WASTEWATER NEUTRALIZATION SYSTEM.  
Specified process analyzers for pH, SO<sub>2</sub>, NO<sub>X</sub>, and CO. Other responsibilities included review of PLC programming and the design of annunciator systems.

Prepared control strategies for the following units: PRIMARY CRUDE UNIT, SECONDARY CRUDE UNIT, DELAYED COKING UNIT AND COKE DRUMS, DECOKING AND STEAM OUT FACILITIES, and UTILITIES. Responsible for field evaluation of existing instrumentation to modify and interface existing equipment with a computer based Distributed Control System.

## EDUCATION

### **Bachelor of Science in Chemical Engineering in EIT Certificate. Grade Point**

University of California - Santa Barbara, CA  
1983

### **General Electric PLC LogicMaster**

University of Minnesota Short

## LINKS

<http://www.linkedin.com/pub/james-long/19/2b2/120/notjfl@sbcglobal.net>