Gary W. McBride

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CHEMICAL ENGINEER / TECHNICAL CONSULTANT / OPERATIONS ANALYST
CHEMICAL, PETROLEUM & PHARMACEUTICAL INDUSTRIES

Seasoned engineering professional successful leading sophisticated product design, development, and scale-up programs to meet diverse market and industry demands. Expert in advanced modeling, design of experiments, and statistical analysis methodologies; adept transforming theoretical concepts into practical business applications that drive gains in productivity, efficiency, and profitability.

Process Improvement	Statistical Analysis	Risk Analysis & Mitigation
Simulation & Modeling	Experiment Design	Policy Analysis
Project Management	Research & Development	Technical Report Writing

RECENT PERFORMANCE HIGHLIGHTS

Transform engineering knowledge into practical business solutions. The company (FMC Corporation) was faced with the problem of limited production capacity in the face of steadily increasing market demand for its high-value product. Utilizing experimental design, statistical methods, and simulation, developed a mathematical model of key chemical reactions to identify potential capacity improvement opportunities.

Result: Achieved a 30% increase in production capacity, and dramatically increased process yield and selectivity.

Adept mastering new and complex skills, translating theoretical knowledge into practical business tools. When the company (Reilly Industries) was faced with the sudden and unexpected departure of their corporate modeling and simulation expert, personally took the initiative to fill the vacuum by independently developing the critical skills required to continue efficient manufacturing processes.

Result: Developed 25 sophisticated engineering simulation models, rescuing productivity for manufacturing operations and capital projects worth $12 million.

An engineering expert, experienced in a variety of international environments with extensive travel across Europe, Asia, and the Middle East. Currently completing thesis work towards a Master's Degree in International Relations with a research focus on quantitative risk assessment and policy design. As such, selected to work with Reilly overseas facilities to coordinate inter-site engineering efforts.

Result: Collaborated with Reilly's Belgian facility engineering team to improve batch distillation yields by 30% — a $50K / year benefit.

PROFESSIONAL EXPERIENCE

Chemical Process Engineer

UNI Group – Indianapolis, IN (2000 – 2003)

Multi-national producer of refined petrochemicals and specialty performance chemicals.

Challenge: As support to both corporate management and operations staff, accelerate product development, increase yields and production rates, and design and implement processes to reduce cost and problematic manufacturing issues.

- Developed process engineering design packages including material and energy balances, detailed equipment designs, and supporting documentation for new and existing processes.
- Simulated chemical processes including continuous and batch separations, reactions, and heat exchange operations for capital improvement projects.
- Developed a custom software package designed to accurately and efficiently capture and analyze manufacturing yields, production, and energy consumption data.
- Developed and implemented a new and improved engineering change management system.
- Optimized continuous and batch distillation operations — a $200K / year benefit.

Chemical Process Engineer
Process Risk Analyst
Alternative Technology Corporation – Baltimore, MD (1995 – 2000)
US Fortune 500 producer of agricultural and specialty chemicals.

Challenge: To spearhead capital projects, process analysis and improvement, process research and development, risk analysis and management, and control systems software design. Ad hoc support to manufacturing departments as required.

- Implemented technology innovations that increased the manufacturing capacity of a specialty chemical plant by 30% — a $250K / year benefit.
- Managed the implementation of an improved environmental control system incorporating new technology that significantly reduced manufacturing downtime — a $100K / year benefit.
- Fully automated a two-step batch reaction and distillation sequence — a $50K / year benefit.
- Developed and implemented risk analysis programs for 3 herbicide manufacturing plants.

Technical Consultant
Software Engineering Consultants – Virginia Beach, VA (1994 – 1995)
Global provider of software analysis and validation services for the pharmaceutical industry.

Challenge: To analyze Client Company's manufacturing control system software, developing test plans for validation. Liaise with client directly to communicate new specifications, operating procedures, and project reports.

- Developed a complete software and hardware validation package for an automated pharmaceutical packaging line.

Senior Project Engineer
Project Engineer
International Paper Company – Bastrop, Louisiana (1991 – 1994)
Multi-national pulp and paper manufacturer.

Challenge: To design, develop, and implement process models, automation control software, and systems. Manage and supervise automation implementation initiatives for large capital projects.

- Developed an innovative technology that eliminated the need for expensive sensing computers in the manufacturing facility — a $125K / year benefit.
- Developed the process control engineering package for a new, chlorine-free manufacturing process.
- Designed and implemented a control system to automatically optimize water usage, reducing waste water generation by 20% — a $250K / year benefit.
- Implemented ISO 9001 standards to plant manufacturing control system to achieve first-time certification.

EDUCATION & RECENT SPECIAL TRAINING

Master of Arts (with honors), International Relations – Concentration on Political Risk Analysis
Purdue University – West Lafayette, IN

Bachelor of Science, Chemical Engineering
University of Maryland – College Park, MD

Six Sigma Black Belt Training • Chemical Separations Technology (AICHE)
Advanced Chemical Process Simulation & Modeling Methods (ASPEN)
Statistical Analysis and Design of Experiments • Process Hazards Analysis – Team Leader Training
Project Management (Kepner-Tragoe) • ISO 9001 Auditor Training • Corporate Financial Analysis
Proficient in EXCEL, MS OFFICE applications, MINITAB and SPSS statistical software packages

CERTIFICATIONS, PUBLICATIONS AND AWARDS

Certified E.I.T. (Engineer in Training)
Granted by the Louisiana State Board of Professional Engineers

"Pulp Brightness Algorithm Implemented at Louisiana", Process Control Monthly (January 1999)

Technology Implementation Award, 2001 – UNI Group

CURRENT PROFESSIONAL & ACADEMIC MEMBERSHIPS

Member, American Institute of Chemical Engineers
Pi-Sigma-Alpha National Political Science Honor Society

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