

ROGER G. FORD, PH.D., P.E.

8-10

SENIOR QUALITY SYSTEMS AND STATISTICAL CONTROL CONSULTANT FOR MULTIPLE MEDICAL DEVICE AND PHARMACEUTICAL PROJECTS AND CLIENTS

R.A.Q.A. ASSOCIATES, INC.
3016 GRANDVIEW DRIVE
SAN ANGELO, TEXAS 76904

SAN ANGELO, TEXAS 76904
325-949-3688 HOME
325-374-5347 MOBILE
rgford1@suddenlink.net

EDUCATION

| | | |
|--------------|--|------|
| BSIE | Texas Technological College | 1969 |
| MSIE | Texas Tech University | 1972 |
| Ph.D. | The University of Texas at Arlington (Dissertation Advisor - D.H. Liles, Ph.D., P.E.) | 1988 |

***Additional graduate work in Business (15 hours), Marketing (6 hours), and Engineering (3 hours) from University of North Texas, and Southern Methodist University.

DISSERTATION ABSTRACT

My Ph.D. dissertation from the University of Texas at Arlington (1988) is in the Industrial Engineering discipline and is titled "Statistical Process Control of Small Batch Processes". The following is the abstract from the dissertation itself:

Enhancing product quality is one of the primary objectives of the manufacturing enterprise. Traditionally, quality control systems perform end-item inspection to separate the acceptable products from the unacceptable. This traditional post-process inspection approach usually occurs after a considerable delay following production and usually provides no useable feedback to the process. As an alternative, the concepts of statistical process control are currently being revived in manufacturing. The basic idea is, of course, to evaluate the performance of the process in a timely manner so that if a problem occurs, corrective action can be taken before additional unacceptable parts are produced. In theory, if process control can be fully implemented, the quality of the product will increase and the cost of quality will decrease. This dissertation presents a design of a statistical process control decision system for the control of dimensional conformance in low volume, small batch, flexible manufacturing systems. The flexible manufacturing systems of interest are for metal removal and typically include several numerically controlled milling machines with one or more coordinate measuring machines. The decision system consists of a part measurement strategy, an analysis strategy, and interpretation guidelines. A simulation of the decision system is included along with conclusions and recommendations.

EXPERIENCE

- Currently a Senior Quality Systems and Statistical Control Consultant for Multiple medical device and pharmaceutical projects and clients for R.A.Q.A. Associates, Inc. (www.raqaassociates.com), and an adjunct professor in the Business School, Department of Management and Marketing, Angelo State University, San Angelo, Texas (www.angelo.edu).
- Gambro Renal Products, a Swedish based company with manufacturing sites in Sweden, Germany, France, Italy, Mexico, and the U.S. and R&D sites in Sweden, Germany, France, and Italy, from March 2008 to September 2010. Started as Director of Process Excellence for the company in a global role reporting to the Senior Vice President of QA/RA. Duties and responsibilities for Validation coordination and standardization globally among Gambro's 14 manufacturing sites as well as Master Black Belt consultation. Responsible for the validation of the start-up of Gambro's new \$180 million dollar dialyzer facility in Opelika, Alabama, where I supervised the entire plant validation effort as well as a team of 10 consultants hired to assist in the effort. Successful validation accomplished in six months. In September, 2008, was promoted to Vice President

of Global QA/RA R&D and Process Excellence with three four direct reports and a total of 35 worldwide employees in the entire organization covering all of Gambro's products from monitors (Sweden and Italy), to dialyzers (Germany, France, and the U.S.), to solutions (Sweden, Italy, China, Korea, and the U.S.), to bloodlines (Italy, Mexico, Germany, and the Czech Republic). Responsible for all of Gambro's global medical device registrations, variations, and drug registrations, 510k submissions, and R&D Project Management for developmental projects as well as Sustaining Engineering for released products in the field – all from a QA perspective such as setting valid KPIs, sensible MTBF goals, determination of readiness to pass toll gates in Gambro's Product Development Process (PDP), and Design Reviews. Coverage in all regions (APAC, EMEA, and the Americas – over 100 countries) and in all three Business Units (Chronic, Acute, and Ventures). Responsible for global training on Lifecycles and Validation, writing and implementing a suite of validation documentation for Gambro on a global scale, training globally to the new validation documentation and procedures, and maintaining and heading a Global Validation Work Group and Global Validation Review Board. Involved in many foreign FDA inspections in Italy, Sweden, and Germany from the preparatory work through the inspections themselves. Traveled extensively but based in Texas.

- Ethicon, a Johnson & Johnson Company, San Angelo, Texas, March 2001 to March 2008. Staff Quality Engineer, Quality Assurance Engineering Technical Leader, and Supply Chain Quality Engineering Manager in a medical device manufacturing facility (sutures). Project management, team leader, and responsible for a Quality Assurance Group of fifty people from Principle Engineer to Senior Engineer to Associate Engineer to QA Technician. Member of Worldwide Quality Engineering Leadership Team representing San Angelo with Team members from the North American Group (San Angelo, Juarez, Puerto Rico, Georgia, and New Jersey), India, China, England, Scotland, France, Brazil, Germany, and Switzerland. Report to Plant Quality Manager. Regulatory assurance pertaining to FDA (21 CFR Part 820 and 21 CFR Part 11) and ISO (13485, ISO9001:1994, ISO9001:2000, and ISO14001), design change control, process change control, sampling plan review, Quality Engineering approvals for process performance qualifications, Engineering Change Notices (ECNs), and Computer System Validations (CSVs), test method validations, production line QA support, and QA project definition and management. Six Sigma J&J Master Black Belt, Six Sigma J&J Certified Black Belt, member of Process Excellence Leadership Team for San Angelo facility, member of the Process Excellence (Six Sigma) Board for San Angelo Ethicon site, mentor of Green Belt and Black Belt projects, instructor of numerous Green Belt and Black Belt Training Waves. Received J&J Standards of Excellence Award in 2005 and 2006. Quality Assurance Engineering for new processes, equipment qualification, and error or defect tracking. Process Capability and Control consulting including process mapping, process FMEA, sampling plan design, process control procedures, process capability determination, and design of experiments. On-line analytical processing (OLAP) and Open database connectivity (ODBC) reporting, tracking and trending with SAS (PC based statistical analysis software). Project Management course developed and presented to all associates in the San Angelo facility.
- Adjunct professor in the Management and Marketing Department of Angelo State University from 2001 to 2008. Courses taught include Operations Management, Statistics, and Project Management – both undergrad and graduate..
- Adjunct professor for Kennedy Western University (Now Warren National University) from 1992 to 2008. Primary faculty representative for General Engineering, Quality Control, and Engineering Management. Responsible for student mathematics advising, course outlines, practice exams, and final exams delivered on-line. Also responsible as advisor and evaluator for Bachelor level final papers, Master's Theses, and doctoral dissertations in the areas mentioned.
- Teaching for Howard College from 2004 to 2007, San Angelo, for Professional Development Program covering subjects such as Total Quality Management, Project Management, Customer Relationship Management, and Six Sigma.
- Chosen to be a member of the Examiner Board and served as an Examiner for the Texas Award for Performance Excellence, 2001-2002 (Texas version of the Malcolm Baldrige National Quality Award).
- Gateway, Inc., North Sioux City, South Dakota, August, 1998 to February, 2001. Manufacturing Six Sigma Master Black Belt and Gateway Certified Black Belt. Project Leader, team leader, and responsible for ten Black Belts and Green Belts in corporate-wide projects impacting Global Manufacturing by saving over \$45 Million in the first year of Business Process Simplification. Direct report of Global Operations Vice President. Project Manager/ Senior Business Analyst. Managed company-wide Y2K hardware and software compliance effort for all five domestic manufacturing sites from California to Virginia as well as international sites and operating systems. Y2K Contingency Plans successfully written and accepted by all domestic sites. Successful compliance of hardware and software assets. Project Lead in a corporation-wide ERP Configuration Management direction change involving the selling of initial concepts to impacted departments, formulating

project plans from investigation efforts through to implementation strategies, engaging and managing outside consulting expertise, and coordination and management of impacted departments in project milestones through to completion. Designed, coordinated, and managed the Business Simulation effort to verify the readiness of personnel at all five of the domestic sites for the company-wide ERP change. Outcome contributed to the actual conversion confidence and successful implementation of the ERP package. Designed and simulated Gateway's outbound freight charge model in order to determine if UPS zone skipping would save the company significant dollars to justify the activity. Identified several million dollars in savings annually. Evaluated top logistical software applications. Primary function to identify, analyze, and solve daily manufacturing systems problems originating with IT resources, manufacturing procedures, manufacturing finance interface, or supply chain/distribution issues.

- Tenured Associate Professor of Engineering, Department of Engineering, St. Mary's University, August, 1991, to August, 1998. Director and Graduate Advisor of the Engineering Systems Management Program December, 1993 to 1997. Teaching at the graduate and undergraduate level and research activities. Manufacturing engineering, manufacturing processes, CIM, industrial robotics, statistical quality control and reliability, engineering economics, industrial biomechanics, industrial controls and automation, "C" and FORTRAN programming. Student Chapter of the Institute of Industrial Engineers (IIE) co-advisor. Assistant Professor of Engineering August, 1991, to May, 1993. Tenure received 1995.
- Assistant Professor, Department of Industrial Engineering, Texas Tech University, June, 1989, to August, 1991. Research activities and teaching at the graduate and undergraduate level. Manufacturing engineering, manufacturing processes, engineering economics, just-in-time concepts, industrial controls, robotics, flexible manufacturing systems, computer integrated manufacturing, industrial statistics, and quality control. Senior projects coordinator, Student Chapter of the Institute of Industrial Engineers (IIE) advisor, Student Chapter faculty advisor for Society of Manufacturing Engineers. Negotiated the donation of a \$65,000 six-axis articulated arm Intelledex robot to the Industrial Engineering Department in 1989.
- Teaching engineering and mathematics at the university level at Tarleton State University starting part-time in 1982, and full time in January, 1984, until June, 1989. Courses taught include Statics, Strength of Materials, Calculus, Algebra, Trigonometry, Business Math, Engineering Graphics, and FORTRAN. September, 1988, Assistant Professor. From September 1987 until June 1989, Associate Director, Hydrology/Engineering Division. Responsible for promotion of the Hydrology and Engineering programs both on and off campus; recruitment, grant solicitations, and teaching in both programs.
- Owned and operated a retail health food store from 1980 to 1984 in Granbury, Texas.
- Self-employed in manufacture of specialized instruction materials utilized in nationwide child-care centers from 1977 through 1985.
- Self-employed in cultivation, marketing and sales of bait for domestic fishing industry from 1977 through 1983.
- Nalco Chemical Company, Sugarland, Texas, from January, 1977 through August, 1979. Job title - District Sales Engineer. Sold and serviced water treatment chemical accounts in the Freeport, Lake Jackson, Sweeney areas covering \$2 million worth of accounts for Dow Chemical Co., Dow-Badische Chemical Co., Nalco Chemical Co., and Phillips Petroleum. Sales awards received.
- Ciba-Geigy Corporation, Houston, Texas, from March, 1975 to January, 1977. Job title - Technical Services Supervisor. Nationwide responsibility for engineering sales presentations, piping and accessories design, field problem resolution, technical consulting, and jobsite instruction. Ciba-Geigy Corporation - Burkburnett, Texas, from September, 1973 to March, 1975. Job title - Production Supervisor. Managed five departments and seventy employees with a budget of one million annually. Transferred to Marketing.
- Lifson, Wilson, Ferguson & Winick, Inc. - Dallas, Texas, from May, 1972 to September, 1973. Job title - Senior Management Consultant. Nationwide Industrial Engineering Consulting. Facilities Design and Scheduling for bank operations, Standard Cost and Inventory Control Systems Design and Implementation for food industry, investigation and streamlining of accounting practices in construction.
- Texas Tech University - Lubbock, Texas, from January, 1971 to May, 1972. Job title - Teaching Assistant, Industrial Engineering Department. Instructed undergraduate students in Engineering Graphics, Industrial Statistics, and Thermodynamics while working on Masters. Elected student representative to Faculty Meetings.
- LTV Aerospace Corporation, Vought Aeronautics Division, Grand Prairie, Texas, from May, 1969 to January, 1971. Job title - Associate Industrial Engineer. Methods and Standards in Aircraft Manufacturing utilizing Work Measurement, Observation Study, and Time Study.

PROFESSIONAL ORGANIZATIONS AND HONORS

Nominated to the National Air Force Scientific Advisory Board, February 1997. Established as a Subject Matter Expert in the field of Statistical Process Control at NASA Kennedy Space Center 1996. Chosen as a Faculty Fellow to the 1996 and 1997 NASA/ASEE Summer Faculty Fellowship Program at Kennedy Space Center, Florida. Chosen as a team member of Rotary International's Group Study Exchange Program to Australia, 1996.

Listed in Who's Who in Science and Engineering, 3rd Edition, 1996-'97; Registered Professional Engineer in the State of Texas, since 1974. Member of National Society of Professional Engineers; Member of Texas Society of Professional Engineers; Recipient of the Richard Van Trump Achievement Award for Outstanding and Meritorious Service to the Fort Worth Chapter of Texas Society of Professional Engineers, 1987; Senior Member, Institute of Industrial Engineers; Member, American Society for Engineering Education; Member, American Society for Quality (ASQ); Senior Member, Society of Manufacturing Engineers; Member, Sigma Xi--The Scientific Research Society; Member, Alpha Pi Mu--National Industrial Engineering Honor Society; Member, Omega Rho--International Honor Society. Past President, 1983-84, Honor Club Citation, Optimist Club of Granbury, Texas. Member, Optimist Club of Stephenville, Texas. Faculty Advisor to the Student Chapter of the Society of Manufacturing Engineers at Texas Tech University. Faculty Advisor to Delta Student Chapter of Texas Society of Professional Engineers at Tarleton State University. Faculty Advisor to student chapter of the American Water Resources Association at Tarleton State University. President of the Granbury Middle School PTA, 1987-88. Faculty Advisor to the student chapter of the Institute of Industrial Engineers at Texas Tech University, 1989 through 1991, and at St. Mary's University, 1991 to 1998.

CONSULTING AND RESEARCH

- Fulfilled contract with the Air Force Institute of Scientific Research at Kelly Air Force Base to provide graduate student labor in a Statistical Process Control establishment and evaluation effort (\$19,200) calendar year 1997.
- Faculty Fellow in the 1997 NASA/ASEE Summer Faculty Fellowship Program at Kennedy Space Center, Florida.
- Faculty Fellow in the 1996 NASA/ASEE Summer Faculty Fellowship Program at Kennedy Space Center, Florida.
- Research Associate for the Air Force Office of Scientific Research Summer Faculty Research Program, Kelly Air Force Base, May 15, 1996, to September 15, 1996. Statistical Process Control Application in the machine shop and related activities to the Air Logistics Center remanufacturing efforts.
- Extension granted for the calendar year of 1996 in the amount of \$20,000 to continue the Air Force Office of Scientific Research effort of the summer of 1995 at Kelly Air Force Base.
- Research Associate for the Air Force Office of Scientific Research Summer Faculty Research Program, Kelly Air Force Base, May 15, 1995, to August 4, 1995. Statistical Process Control Application in the machine shop and related activities to the Air Logistics Center remanufacturing efforts.
- Observation Study of the Oil Analysis Laboratory, Darr Equipment Co., Dallas, Texas, March, 1991. Fee paid.
- Supervision of Senior Project class at Texas Tech which involves consulting projects for Lubbock area companies such as Frito-Lay, Texas Instruments, Grinnell, Goulds Pumps, and others.
- Supervision of Senior Projects at St. Mary's University involving consulting projects for San Antonio area companies such as Bausch & Lomb, Pace Picante Sauce, HEB, Kelly AFB, Kinetic Concepts, Scott Sani-Fresh, and others.

PUBLICATIONS

- "Safety and Mission Assurance Management Tools for a Performance Based Contract Environment," 1997 Research Reports, NASA/ASEE Summer Faculty Fellowship Program, John F. Kennedy Space Center, University of Florida, NASA Grant NAG10-0207.
- "Legal Efficiency: An Industrial Engineering Analysis of San Antonio Law Offices," T.L. McCracken and R.G. Ford, International Journal of Facilities Management, September 1998.
- "Use of Statistical Process Control in a Repair/Refurbish/Remanufacture Environment," M.L. Smith and R.G. Ford, the Air Force Office of Scientific Research, Bolling Air Force Base, DC, December 1997.

- "Statistical Process Control for KSC Processing," 1996 Research Reports, NASA/ASEE Summer Faculty Fellowship Program, John F. Kennedy Space Center, University of Florida, NASA Grant NGT10-52605.
- "Development and Implementation of a Software-Based Quality Manufacturing Lab," a paper co-written with R. Moras published in conference proceedings and presented at the ASEE/GSW Conference in San Antonio in March 1996.
- "A Five-Year Quest for a 'Quality Manufacturing' Lab," published in conference proceedings and presented at the 19th International Conference on Computers and Industrial Engineering in Miami, March 1996.
- "A Statistical Process Control Successful Application: Design, Implementation, and Process Improvement at a Closing Base," M.L.Smith and R.G. Ford, the Air Force Office of Scientific Research, Bolling Air Force Base, DC, October 1996.
- "Air Force Repair Depot Privatization and Statistical Process Control," Institute of Industrial Engineers Solutions (Journal of IIE), December 1995.
- "Use of Statistical Process Control in a Repair/Refurbish/Remanufacture Environment with Small Lot Sizes," R.G.Ford, the Air Force Office of Scientific Research, Bolling Air Force Base, DC, October 1995.
- "Engineering Ethics in the Management of the Curricula," by R.G. Moras and R.G. Ford, American Society for Engineering Education/Gulf Southwest Section 1995 Annual Conference, Lamar University, March 1995.
- "Integrating Traditional and Modern Technologies to Teach Engineering Graphics," by Naghi K. Tabari, R.G. Moras, and R.G. Ford, American Society for Engineering Education/Gulf Southwest Section 1995 Annual Conference, Lamar University, March 1995.
- "Statistical Process Control Utilization in the Austin-San Antonio Corridor," The 17th International Conference on Computers and Industrial Engineering, Phoenix, Arizona, March, 1995.
- "A Five Year Quest for a 'Quality Manufacturing Lab,'" In Context, St. Mary's University, Spring 1995, by R.G. Ford.
- "Industrial Engineering: The St. Mary's Industrial Connection," Gold & Blue, St. Mary's University, Spring 1994, by R.G. Moras and R.G. Ford.
- "Quality Success Stories in San Antonio Industry," Production and Inventory Management Journal, December, 1994, by R.G.Moras, C.Moras Sanchez, and R.G.Ford.
- "Undergraduate Program in Quality Manufacturing", Proceedings of the 1993 ASEE Gulf-Southwest Section Annual Meeting, April 1-2, 1993, University of Texas at Austin, by R.G. Moras and R.G. Ford.
- "Using High Technology to Enhance Engineering Communications", Proceedings of the 1993 ASEE Gulf-Southwest Section Annual Meeting, April 1-2, 1993, University of Texas at Austin, by R.G. Moras and R.G. Ford.
- "Ethics Engineering Style", Pro-Ethics, St. Mary's University, May 1993.
- "Wafer Handling with Levitation", Journal of Electronics Manufacturing (1992) 2, 101-107, Aik-Siong Koh, Roger Ford, and Thangali Seshadri.
- "Productivity Improvements Through Predictive and Total Productive Maintenance", Proceedings of the 1992 MAES National Symposium, April 22-25, 1992, San Antonio, Texas, by R.G. Moras, K.S. Varanasi, N.I. Al-Ahkras, and R.G. Ford.
- "Advanced Manufacturing Technologies", Proceedings of the 1992 MAES National Symposium, April 22-25, 1992, San Antonio, Texas, by K.S. Varanasi, R.G. Moras, and R.G. Ford.
- Engineering Economic Analysis Test Bank, C.L.Burford and R.G. Ford, Editors. Engineering Press, Inc., 1992.
- "Noncontact Handling of Semiconductor Wafers," A Technical Paper for the American Society of Mechanical Engineers' Manufacturing International Conference, March 31, 1992, Dallas, Texas, by Aik- Siong Koh, R.G. Ford, and Thangali Seshadri.
- "Electronic Product and Process Design Principles for Scheduling," Proceedings of FAIM '91, Limerick, Ireland, March 1991 by Peter Chai and R.G. Ford.
- "Undergraduate Program in Manufacturing for Quality (MFQ)," Proceedings of the American Society for Engineering Education Annual Conference, June 1991, New Orleans, by R.G. Ford and T.B. Leamon.
- "Integration of Equipment for a Flexible Manufacturing Laboratory," Proceedings of the American Society for Engineering Education Annual Conference, June 1991, New Orleans, by R.G. Ford and Sheng-Jen Hsieh.
- "Noncontact Semiconductor Wafer Handling," A Technical Paper for The Society of Manufacturing Engineers and the Association for Electronics Manufacturing's Semiconductor Manufacturing Conference, 1990, Phoenix, by R.G. Ford and Aik-Siong Koh.
- "A Small Batch Process Statistical Control Decision Architecture," The International Technology Institute's 1988 International Congress on Technology and Technology Exchange Proceedings, 1988, Pittsburgh, by R.G. Ford and D.H. Liles.

- "A Decision Architecture for the Statistical Control of Small Batch Processes," Institute of Industrial Engineers' 1988 IIE Systems Integration Conference Proceedings, 1988, St. Louis, by R.G. Ford and D.H. Liles.
- "A Decision Architecture for the Statistical Control of Small Batch Processes." Unpublished Ph.D. dissertation, The University of Texas at Arlington, Department of Industrial Engineering., 1988.
- "NASA Oversight to Insight: Performance Based Contract Changes," paper and presentation made to the 7th Annual Industrial Engineering Research Conference, May 9-10, 1998, Banff, Alberta, Canada.
- An article submitted to the American Society for Engineering Education's Journal of Engineering Education covering ethics in the engineering curriculum at St. Mary's and the cooperative effort in pedagogy between the Engineering Department and the Philosophy Department. Spring 1998.
- An article submitted to the American Society of Quality Control Journal covering safety as a part of Total Quality Management. Spring 1998.

INDUSTRIAL WORKSHOPS CONDUCTED

Industrial workshops offered (over 20) from 1991 through 2007 to over 500 people. The workshops were offered in the areas of Total Quality Management (TQM), Customer Relationship Management, Just-In-Time (JIT), Project Management, Productivity Improvement, and Statistical Process Control. Some organizations sponsoring the workshops include San Angelo Standard Times Newspaper, Angelo State University Continuing Education, Howard College San Angelo, St. Mary's University, Kelly Air Force Base, Bexar Appraisal District, and Ft. Sam Houston. Companies sending personnel to workshops include NASA, Sony, Bausch & Lomb, San Angelo Standard Times Newspaper, Ethicon, Inc., Fairchild Aircraft, Pace Picante Sauce, Coca-Cola, Columbia Industries, Coleman Outdoor Products, Alamo Iron Works, Engine Components, Alcoa-Fujikura, and Texace Corporation.

RESEARCH PROPOSALS (FUNDED)

- Ford, Roger G. (1997) PI. "Quality Manufacturing (QM) WebPage," Minority Science Improvement Program (MSIP), U.S. Department of Education, submitted December 1996, funded August 1997, \$50,000.
- Ford, Roger G. (1996) Air Force Office of Scientific Research Summer Research Extension Program Proposal "Use of Statistical Process Control in a Repair/Refurbish/Remanufacture Environment With Small Lot Sizes," funded February 1997, \$19,200, for calendar year 1997.
- Ford, Roger G. (1995) Air Force Office of Scientific Research Summer Research Extension Program Proposal "Use of Statistical Process Control in a Repair/Refurbish/Remanufacture Environment With Small Lot Sizes," funded February 1996, \$20,000, for calendar year 1996.
- Ford, Roger G. (1995) PI. Continuation of "Undergraduate Program in Quality Manufacturing (QM)," Minority Science Improvement Program (MSIP), U.S. Department of Education, submitted December 1993, funded July 1994, \$60,000.
- Ford, Roger G. (1994) " Modern Integrated Manufacturing as a Productivity Enhancement in Small to Intermediate Production Facilities," Faculty Development Award and Fellowship, submitted November 1994, funded December 1994, \$800.
- Ford, Roger G. (1994) PI. "Undergraduate Program in Quality Manufacturing (QM)," Minority Science Improvement Program (MSIP), U.S. Department of Education, submitted December 1993, funded July 1994, \$60,000.
- Ford, Roger G. (1994) Member support team and co-PI. "MIE: Opening Doors to Careers in Science, Engineering, and Math." submitted July, 1993, funded as planning grant April, 1994, \$52,020.
- Ford, Roger G. (1993) "Statistical Process Control Modeling for Low Volume Non-Homogeneous Small Batch Manufacturing Processes, " Faculty Teaching and Research Fellowships, submitted November 1993, funded January 1994, \$900.
- Ford, Roger G. (1989) co-PI. "Productivity of Single Wafer Fabrication Cell," State of Texas, submitted Oct 89, funded Jan 1 - Dec 31, 1990, \$52,560.
- Ford, Roger G. (1989). "Automatic Storage and Retrieval System Design and Implementation," College of Engineering Research, Texas Tech University, submitted Aug 1989, funded Sep 89 - Dec 89, \$3000.

OTHER RESEARCH PROPOSALS

- Ford, Roger G. (1997) PI. "An Air Engine Design and Manufacturing Project," Instrumentation and Laboratory Improvement Program, National Science Foundation, \$ 33,457, submitted November 1997.
- Ford, Roger G. (1995) co-PI. Office Ergonomics Research Committee Application Proforma Statement for Research Funds, "Use of Electromyography to Determine Musculoskeletal Effects of Large Computer Monitor Placement Compared With Smaller Sized Monitors," submitted November 1995.
- Co-Participant in the Ethics in the Disciplines Research Seminar, proposal to National Endowment for the Humanities, submitted September 1995.
- Ford, Roger G. (1994) co-PI. Model Institutions for Excellence Program of the National Science Foundation, Submitted November 1994.
- Ford, Roger G. (1994) Shell Oil Company Foundation's Shell Departmental Grant Program, submitted August, 1994.
- Ford, Roger G. (1993) Project Director. Science, Engineering, and Mathematics Education Program for Historically Black Colleges and Universities and Minority Institutions, Office of Naval Research, Submitted January 1994.
- Ford, Roger G. (1991) co-PI. "Undergraduate Program in Quality Manufacturing (QM)," Minority Science Improvement Program (MSIP), U.S. Department of Education, Submitted December 1991.
- Ford, Roger G. (1990) co-PI. "Undergraduate Program In Manufacturing for Quality (MFQ)," National Science Foundation's Undergraduate Curriculum Development in Engineering, Mathematics, and the Sciences, Submitted October 1990.
- Ford, Roger G. (1990) co-PI. "Noncontact Handling of Semiconductor Wafers," SEMATECH, July 1990.
- Ford, Roger G. (1989). "Modern Integrated Manufacturing as a Productivity Enhancement in Small to Intermediate Industries," Texas Advanced Technology Program, Submitted July 1989.
- Ford, Roger G. (1989). "Statistical Process Control Modeling for Low-Volume Non-Homogeneous, Small Batch Manufacturing Processes," Texas Advanced Research Program, Submitted July 1989.

REFEREE SERVICE

- Have served as a referee to the "Computers & Industrial Engineering - An International Journal" 1995-1998.

UNIVERSITY SERVICE

- Appointed Adjunct Professor, Department of Management and Marketing, Angelo State University, San Angelo, Texas, from Fall 2001 through the 2007/2008 academic year.
- Appointed to the University Service Learning Task Force by the Vice President for Academic Affairs, St. Mary's University, September 1997.
- Appointed by the St. Mary's University VPAA to the Pre-Law Recommendation Evaluation Committee as the SET representative (one representative from each of the undergraduate schools plus the Chair) 1997, 1998.
- Appeared as NASA expert and industrial manufacturing expert on Fox News Channel, Catholic Television CTSA, KENS Television, KABB Television, KTSA Radio, WOAI Radio, and had OP-ED pieces appear in the San Antonio Express-News as a result of the cooperation with the Public Relations Office at St. Mary's and Roe Ann Wood of that office (1997, 1998).
- Chosen as one of the Seminarists in the Ethics-in-the-Disciplines Program, a faculty development project initiated by Dean Charles Miller, S.M., and Dr. James B. Sauer to support the ethics-across-the-curriculum initiative in the strategic plan of the university. Begins January 1997 through the calendar year.
- Chair, Associate Professor Promotion-in-Rank Committee, School of Science, Engineering, and Technology, Fall 1996.
- Member, Associate Professor Promotion-in-Rank Committee, Graduate School, Fall 1996.
- Chair, Faculty Development Committee for Rafael Moras, 1995-'96.
- Named as first Faculty Senate representative to the St. Mary's University Budget Committee 1995-'96, 1996-'97.
- Named to represent SET as a member and advisor to the Retention Management System (RMS) and Early Alert System by the Vice President of Student Development to assist in student retention – 1995.
- Member Search Committee for the position of Assistant to the Vice President for Academic Affairs. Chair of the Search Committee is the Dean of the Graduate School, Dr. Ronald D. Merrell. March 1995.
- St. Mary's Coordinator for SABEST, inaugural year 1994, mentor at Clark High School; 1995 mentor at Edgewood High School; 1996 mentor at Brackenridge High School.

- Member of the President's Strategic Planning Task Force on Financial Issues, Academic Year 1994-95.
- Member of the Faculty Senate, Faculty Senator 1993-1994, 1994-1995, 1995-1996, 1996-1997, 1997-1998.
- Chair Faculty Senate Committee, Administrator Evaluations, 1994.
- Director and Graduate Advisor of the multi-disciplinary Engineering Systems Management Program 1993-1998.
- Member of the Core Curriculum Committee 1993-1998.
- Engineering Recruitment and Retention Committee 1993-1998.
- Member of the Planning Council of the Center for Professional Ethics at St. Mary's University 1992-1998.
- Faculty Moderator to the student chapter of the Institute of Industrial Engineers (IIE) 1991-1998.
- Academic Advisor to the Industrial Engineering Undergraduate Program 1991-1998.
- Co-Director, St. Mary's University Productivity Institute, an outreach program to the greater San Antonio industrial community. Offering workshops and seminars to industrial organizations, military organizations, and governmental organizations 1991-1998.
- University Convocation Committee at Texas Tech University, 1990-91.
- Convocation Marshall, 1990-91.
- Faculty Sponsor of the Student Chapter of the Institute of Industrial Engineers at Texas Tech, 1989-91.
- Faculty Sponsor of the Student Chapter of the Society of Manufacturing Engineers at Texas Tech, 1989-91.
- Scholarship Committee in the Department of Industrial Engineering at Texas Tech, 1989-91.
- Faculty Search Committee at Texas Tech, 1989-91.
- Member Applied Science Committee at Tarleton State University, 1988-89.
- Associate Director, Hydrology and Engineering Division, Tarleton State University, 1987-89.
- Faculty Advisor to the Delta Student Chapter of the Texas Society of Professional Engineers at Tarleton State University, 1987-89.
- Faculty Advisor to the Student Chapter of the American Water Resources Association at Tarleton State University, 1987-89.

PERSONAL

Married forty-one years to Mary; two boys, Curtis (wife Stephany and three grandchildren – Trinity, Garrett, and Jake), 39, and Ryan (wife Catherine and granddaughters Madlyn and Lauren), 36. Height 6'1".

ROGER G. FORD, PH.D., P.E.
TEACHING ACTIVITIES

COURSES TAUGHT

- At Tarleton State University in the Mathematics Department – Fall 1982 through Spring 1989:

Undergraduate courses including Algebra, Trigonometry, Business Math, Calculus, Statics and Dynamics, Strength of Materials, Engineering Graphics, and FORTRAN.

- At Texas Tech Industrial Engineering Department - Summer 1989 through Summer 1991:

Graduate: IE 5351 Manufacturing Analysis (Mfg. Processes)
 IE 5352 Advanced Manufacturing Engineering
 IE 5318 Probability, Statistics, and SQC

Undergraduate: IE 3301 Engineering Economics
 IE 3351 Manufacturing Engineering I
 IE 2351 Principles of Industrial Automation
 IE 4352 Manufacturing Engineering II
 IE 3301 Engineering Economics
 IE 4333 Senior Design Projects

- At St. Mary's University Engineering Department - Fall 1991 through Spring 1998

Graduate: EG 6305 Economic Analysis for Managerial Decisions
 EG 6340 Manufacturing Engineering
 EG 6327 Industrial Robotics
 EG 6332 Operations Research I
 EG 6339 Masters Thesis

Undergraduate: ND 0101 Personal and Academic Development (Special Engineering section)
 EG 1301 Engineering Graphics
 EG 3302 Work Design
 EG 3305 Fortran Programming
 EG 3327 Industrial Robotics
 EG 3303 Work & Productivity Measurement
 EG 3308 Human Factors
 EG 3310 Quality Control & Reliability Engineering
 EG 3331 Manufacturing Systems Design I
 EG 3334 Engineering Economy
 EG 3341 Manufacturing Systems Design II

EG 3325 Automation and Control
EG & PO 2300 High Technology & Society (Team-taught with Political Science Dept.)
EG 3339 Senior Design Projects
PL 2336 Foundational Ethics for Engineers (Team-taught with Philosophy Dept.)

- St. Mary's University Productivity Institute Seminar Topics – 1991 through 1997

Implementing Just-In-Time in America: A Hands-On Workshop
Implementing JIT & Other World-Class Techniques
Developing Leadership in Total Quality and Productivity
Quality Improvement Through QC, SPC, and TQM: A Hands-On Workshop
Effective Project Management: A Workshop
Management of Instructional Products and Programs

- Angelo State University – 2001 to Present (and through 2007/2008 academic year)

MGT 3305 Operations Management
MGT 3361 Project Management
MGT 6312 Operations Management
MSC2331 Business Statistics

FIELDS OF SPECIALIZATION AND RESEARCH AREAS

The primary fields of specialization for Dr. Ford are in Statistical Process Control (SPC) in manufacturing applications, Six Sigma and associated DMAIC project management, computer interfacing with industrial automation of manufacturing processes, a specialized area in the field of Ergonomics, and computerized senior-level manufacturing engineering laboratory project activity.

SPC is a major component of Total Quality Management (TQM) and a management tool that manufacturing (and other application areas) can utilize to gain control of the processes used in an enterprise to reduce or eliminate rework, reject, or poor quality. Recent research includes: (1) in the summers of 1997 and 1996 research fellowships at Kennedy Space Center in Florida for NASA/ASEE in the area of Statistical Process Control, (2) in the summers of 1995 and 1996 in the area of non-traditional use of SPC at the Air Logistics Center at Kelly Air Force Base in San Antonio, Texas, and (3) a year-long contract for continued application of SPC at the Air Logistics Center at Kelly Air Force Base in San Antonio, Texas. Black Belt and Master Black Belt certifications at Gateway and at Ethicon (Johnson & Johnson) in Six Sigma DMAIC, Lean, and DMADV (DFSS). Taught numerous Green Belt and Black Belt training classes over the past 10 years. Acted as Master Black Belt for dozens of projects led by Green Belt and Black Belt candidates as well as certified belts.

Laboratories were taught in the areas of industrial automation, robotics, flexible manufacturing systems, quality manufacturing, and computer integrated manufacturing. The latest addition to the list was as an on-going grant from the Department of Education for the Quality Manufacturing Lab. Two grants covering the time frames of 1994-96 and 1997-99 were received to utilize computer technology in the form of manufacturing information databases and computer simulation programming to allow students to design, simulate, and arrive at a complete production plan including costs for the manufacture of specified components. The current grant is to develop this activity for accessibility from the Internet and the St. Mary's University WebPage. The result was a real-world manufacturing engineering project very close to a first job assignment.

Computer Integrated Manufacturing (CIM) is a target that even today is not a realized fact in most applications. The difficulty in interfacing equipment of different manufacturers is still a major problem as well as the steps involved in setting up computer systems to program, interface, control, obtain data and feedback, and operate manufacturing applications in industry. Area surveys into the need for and use of the CIM technology have been conducted and is an on-going research interest.

The field of Ergonomics is a wide and varied one that includes the human interface with computer equipment and office settings. New research into the effects of state-of-the-art designed computer components and ergonomically designed office furniture on the human body during long duration periods of work is being pursued at the present in conjunction with a large insurance industry.