

STANLEY I. PROCTOR  
50 High Valley Drive  
Chesterfield, Missouri 63017-2716  
(314) 469-3559 (Residence)  
(314) 434-9933 (Office)

**II.A.**

## EDUCATION

1955 Associate in Arts - Belleville Junior College, Belleville, Illinois  
1957 B.S.Ch.E. (Honors) - Washington University, St. Louis, Missouri  
1962 M.S. (Ch.E.) - Washington University, St. Louis, Missouri  
1972 D.Sc. (Ch.E.) - Washington University, St. Louis, Missouri

Continuing Education Courses taken are shown later in this curriculum vitae.

## EXPERIENCE

PROCTOR CONSULTING SERVICES - Chesterfield, Missouri 1993-Present

### *President*

Private consultant in the area of technology and people management. Technology management includes organizational and staffing issues, technology evaluation, planning and development. People management includes interpersonal skills, diversity, leadership, career planning, and team building. Clients have included industrial companies, academic institutions, and government agencies.

MONSANTO COMPANY - St. Louis, Missouri 1959-93

### *Director, Engineering Technology & Services - The Chemical Group (1991-93)*

Responsible for a group of approximately 50 professional and support persons in the areas noted directly below, plus project management of environmental remediation sites, engineering contracts and contractor administration and computer aided engineering.

- Effectively managed consolidation of different engineering functions following restructuring of the engineering department, including coaching of three new managers.
- Successfully led movement toward increased awareness of and concern with diversity issues in the Operations Group. Played the key role in getting Vice President, Operations and staff to participate in diversity training, as well as staff of Engineering Technology and Services. Trained and taught seminars in sexual harassment awareness.
- Maintained highly competent and responsive technical consulting organization in the face of a 15% reduction in staff.
- Established a waste elimination technology program focused on bringing the most appropriate technology to bear on The Chemical Group's efforts in this area. The function has identified opportunities for multi-million dollars in savings over earlier plans.
- Supported development of, and obtained approval for, a \$500K/year safety technology program aimed at helping The Chemical Group improve its safety record and meet all government requirements.

*Director, Engineering Technology - Monsanto Chemical Company (1986-91)*

Responsible for a group of approximately 40 professional and support persons who serve as company consultants in specific disciplines related primarily to process and environmental engineering. Responsible for the development, evaluation, application and dissemination of technology in the areas of environmental engineering, materials engineering, mechanical technology, energy technology, non-destructive testing, process control, process simulation, physical properties, engineering computations, risk analysis and chemical engineering (heat transfer, fluid mechanics, separations, particulate systems, reaction engineering, etc.).

- Effectively managed consolidation of different engineering functions involving a 50% reduction in staff through cross training of specialists and shifting of focus areas in response to customer needs.
- Supported Fellow Program in Engineering, serving as the "ombudsman" for that Fellow Group.
- Served as 1987 President of the 50,000 member American Institute of Chemical Engineers. After dismissal of Executive Director, successfully managed both AIChE office in New York, as well as Engineering Technology organization in St. Louis, for several months.
- Coached subordinates in development of career plans. Achieved the promotion of one manager to director level, and seven technical specialists to senior technical positions (Fellow, Consultant).
- Led Engineering Department in training and application of Breakthrough Technology, resulting in numerous projects focused on the "reinvention of engineering."
- Played key role in team building of the Engineering Department management group, resulting in improved interaction and mutual support
- Undertook lead role in the introduction of diversity concepts in the Chemical Company. Was most senior manager in the Chemical Company to become a Consulting Pair (internal diversity consultant).

*Director, Biotechnology Projects - Corporate Engineering Department (1985-86)*

A new position created to bring focus on developing engineering skills needed to facilitate progression of products based on biotechnology from research to commercial stage. Also had responsibility for engineering projects for Corporate R&D, the Health Care Division, and the Executive Division (laboratories and offices).

- Chaired Project Board that oversaw the successful design and construction of a world-class bioprocess development facility.
- Provided project management support for design and construction of Invitron Corporation's commercial scale mammalian cell culture facility.

*Director, Applied Sciences - Central Research Laboratories (1984-85)*

Management of a diverse group of functions involved in both basic and applied research, and service and support to Monsanto R&D community. These included biochemistry/cell culture research, bioprocess development, Physical Sciences Center (advanced analytical methods services and development), Environmental Sciences Center, and information services (MIS and Information Center). Over 150 professional, technician and support persons were included at four laboratory sites in St. Louis, Missouri and Dayton, Ohio.

- Chaired steering committee which oversaw implementation of a highly successful Research Computing Consortium that furnished responsive and cost effective computing support to all research facilities in the St. Louis area.
- Chaired Project Board that oversaw successful design and construction of a world-class bioprocess development facility.
- Provided technical support to development of a commercial mammalian cell culture facility to be built by Invitron Corporation, formed through Monsanto venture capital.

*Director, Engineering Technology - Corporate Engineering Department (1979-83)*

Responsible for a group of approximately 70 professional and support persons who served as Corporate consultants in specific disciplines related to process engineering. Responsible for the development, evaluation, application and dissemination of technology in the areas of materials engineering, process control, process simulation, physical properties, engineering computations, risk analysis, biochemical engineering and chemical engineering (heat transfer, fluid mechanics, separations, particulate systems, reaction engineering, etc.).

- Played key management role in evaluation and introduction of interactive computing into the Corporate Engineering Department.
- Established engineering technology thrust in biochemical engineering to support the corporate direction in biotechnology.
- Established Process Energy Technology Group to focus on energy conservation through process design and modification, resulting in many million dollars in savings in reduced energy costs.

*Manager, Process Technology - Texas City Plant -  
Monsanto Chemical Intermediates Company (1978-79)*

Managed function was responsible for process development, manufacturing process support and improvement, and capital project support for phenol, acetone, methanol and acetic acid product lines. Also included acetic acid technology licensing - worldwide. Size of section was approximately 40 professional and support persons. Manufacturing facilities and people were located at two plant sites (Texas City and Chocolate Bayou).

*General Superintendent, Manufacturing and Services - Chocolate Bayou Plant -  
Monsanto Chemical Intermediates Company (1976-78)*

Managerial responsibility for Monsanto's primary petrochemical complex. Responsibility also included management of (a) smaller manufacturing units producing diphenyl oxide, formalin, and phenol-formaldehyde resins, (b) the plant quality control laboratories, and (c) the plant MIS organization. Organization consisted of over 200 professional, support and wage roll persons.

*Manager, Engineering, Process Simulation and Dynamics Section -  
Corporate Engineering Department (1973-76)*

Managed function involved approximately 20 professional and support persons in the development, application and evaluation of technology in the areas of engineering computations, process simulation, physical properties, process control and computer control.

Progression of job functions in Engineering

1959-73

*Engineering Superintendent, Engineering Computations (1972-73)*  
*Engineering Supervisor, Engineering Computations (1971-72)*  
*Engineering Supervisor, Chemical Reaction Engineering (1970-71)*  
*Engineering Specialist, Chemical Reaction Engineering (1968-70)*  
*Senior Engineer, Chemical Reaction Engineering (1963-68)*  
*Engineer, Systems Section (1959-63)*

## EDUCATIONAL ACTIVITIES

- National Science Foundation Review Committee for The Foundation Coalition, 1993-97
- National Science Foundation Review Committee for The Gateway Coalition, 1994-96, 1998-99
- National Science Foundation Review Committee for the Synthesis Coalition, 1996-97
- National Science Foundation Committee of Visitors, Education and Engineering Centers, 1998
- National Science Foundation Review Panel - Course, Curriculum and Laboratory Improvement Programs, 2001,2002,2004
- Corporate Development Council, University of Missouri-Rolla, 1991-93.
- Accreditation Board for Engineering and Technology, 1990-Present
  - International Visitor (Substantial Equivalency Evaluations), 1995-Present
    - Institutions Visited:
      - The University of Kuwait - Kuwait City (Chemical Engineering Evaluator)
      - Bogazici University - Istanbul, Turkey (Team Chair)
      - The United Arab Emirates University - Al-Ain (Chemical Engineering Evaluator)
      - King Fahd University of Petroleum and Minerals - Dhahran, Saudi Arabia (Chemical Engineering Evaluator)
    - Chemical Engineering Program Evaluator for Accreditation Visits, 1980–2008
      - Institutions Visited:
        - University of Cincinnati
        - Worcester Polytechnic University
        - Carnegie-Mellon University
        - Massachusetts Institute of Technology
        - Brigham Young University
        - University of Nebraska
        - University of Puerto Rico
        - University of Wisconsin
        - Purdue University
        - Tri-State University
    - Board of Directors, 1990-1998
    - Immediate Past President, 1997-1998
    - President, 1996-97
    - President-elect, 1995-96
    - Secretary, 1994-95
    - Awards Committee (chair), 1997-1998
    - Executive Committee, 1994-1998
    - International Activities Committee, 1995-97
    - Self-study Committee (ad hoc), 1995-96
    - Finance Committee, 1993-95
    - Nominating Committee, 1990-91, 97-98(chair)
    - Industrial Participation Committee (chair), 1990-93
    - Industry Advisory Council, 1990-94, 95-97
    - Educational Policy Committee, 1991-93, 95-96(chair)
    - Executive Director Search Committee, 1992-93
    - 75<sup>th</sup> Anniversary Retrospective Executive Committee, 2005-Present
  - Washington University School of Engineering and Applied Science
    - Alumni Advisory Council Executive Committee, 1992-Present
      - Immediate Past President, 1997-98
      - President, 1996-97
      - Eliot Society Membership Committee, 1992-94 (vice-chair), 1994-96 (chair)

Membership Committee, 2000 – 2002  
Scholarship Committee, 1998-present: Chair, 2001-Present  
National Council, 1996-Present  
Capital Campaign Committee, 1998-2004  
Department of Chemical Engineering Advisory Committee (chair), 1999-2006  
Adjunct Professor of Chemical Engineering, 2005  
Senior Professor of Engineering, 2006  
University Wide Activities  
Alumni Board of Governors, 1996-98  
Endowed Scholarship Committee, 2002-Present  
Gift Chair, 45<sup>th</sup> Class Reunion, 2001-02  
Gift Co-chair, 50<sup>th</sup> Class Reunion, 2006-07

- Industrial Advisory Board, Department of Chemical Engineering, Texas Tech University, 1989-92
- Industrial Advisory Council, Department of Chemical Engineering, Texas A&M University, 1988-92
- Industrial Advisory Committee, Department of Chemical Engineering, Oklahoma State University, 1982 – 85
- Gifted and Talented Education Program Advisory Committee, Parkway School District, St. Louis County, Missouri, 1986-95
- General Advisory Committee, Missouri Scholars Academy, 1984-88
- American Society for Engineering Education, 1981-2007  
Advisory Board, Quality of Engineering Education Project, 1985-86
- Program Review Committee, Department of Chemical Engineering, University of Missouri-Rolla, 1983
- Board of Directors, National Consortium for Graduate Degrees for Minorities in Engineering, Inc., 1981-84
- Research Advisory Subcommittee, Energy and Systems Analysis, Institute of Paper Chemistry, 1980-84
- Lecturer in Continuing Education, Washington University, 1967-68
- Certified Monsanto Instructor, Performance Enhancement Process; Situational Leadership; Managing for Performance; and Sexual Harassment Awareness (in-house management courses)
- Certified Instructor, Social Styles, Wilson Learning Corp.
- Instructor, AIChE Continuing Education Program, 2002-03

## PROFESSIONAL ACTIVITIES

- American Association of Engineering Societies  
Executive Committee, 1993
- The Chemical Heritage Foundation  
Board of Directors, 1988-93, 2004-05  
Site Committee, 1990-93  
Program Committee, 1992-93
- National Society of Professional Engineers
- Missouri Society of Professional Engineers  
Government Relations Committee, 1981-86, 1993-95  
Task Force on the Role of Engineers & Engineering Educational Institutions in Missouri's  
Developing High Technology & Industrial Economy, 1985-86  
Crisis in Engineering Education Committee, 1985-87  
Advisory Group, 1987-88  
Registration Committee, 1991-96
- Metropolitan St. Louis Engineering Guidance Council (through 1976)  
Founding Member  
Vice President, 1975-76
- American Chemical Society  
National Historic Chemical Landmarks Program Advisory Committee, 1992-2001
- Alpha Chi Sigma  
John R. Keubler Award Selection Committee, 1992-95
- American Institute of Chemical Engineers - St. Louis Section  
General Arrangements Committee, Honorary Chair, 1993 Annual Meeting, 1992-93  
Director, 1980-83  
General Chair, Symposium '80, 1979-80  
Section Vice Chair, 1976  
General Chair, Symposium '73 1972-73  
Chair, Career Guidance Committee - 1972-73  
General Arrangements Committee, 1972 Summer National Meeting
- American Institute of Chemical Engineers - National  
Centennial Steering Committee, 2000-Present; Chair, 2000-2005  
Career and Education Operating Council, 1999-2002; Chair, 1999-2000  
Foundation Board of Trustees, 1992-Present  
Chair, St. Louis Pacesetters Campaign, 1993-96  
Vice-chair, 1996-1998  
Chair, 1998-2000  
Past Chair, 2000-2002  
Emeritus Trustee, 2002-Present  
Awards Committee, 1992-97  
History of Chemical Engineering Committee (NPC Area 4f), 1988-Present  
Vice Chair, 1989-90; Chair, 1991-95

American Institute of Chemical Engineers – National – continued

“Frontiers Report” Implementation –ad hoc Committee: Chair, Industry Subcommittee,  
1988-90  
Center for Waste Reduction Technologies: Chair, ad hoc Formation Committee, 1989-90;  
Managing Board, 1990  
Nominating Committee, 1983, 1987-89; 1992-93; Chair, 1988  
Ethics Committee, 1989-92; Chair, 1988  
President, 1987  
Vice President, 1986  
Center for Chemical Plant Safety, Managing Board, 1986-88, Advisory Board, 1986-87  
Finance Committee, 1987  
Executive Committee, 1986-88  
Consulting Editor, Chemical Engineering Progress, 1986-88  
Education and Accreditation Committee, 1985-2008; Program Evaluator, 1980-84, 1990-2008  
Public Relations Committee, 1984-88  
Education Advisory Board, 1984-88  
Director on Council, 1982-84, 1988 (as Immediate Past President)  
Management Division, Director, 1984-86, 2006-Present; Summit Meeting Coordinator, 1989-92;  
Senior Advisor, 2002-05  
Government Programs Steering Committee, 1983-93; Vice Chair, 1988; Chair, 1989-90  
Superfund Task Force, 1993-96  
Constitution and By-Laws Committee, 1982-84; Chair, 1983-84  
Career Guidance Committee, 1974-82; Vice Chair, 1976-78; Chair, 1979-81

- Engineers’ Club of St. Louis, 1965-92
- Registered Professional Engineer – Missouri
- United States Council for International Engineering Practice  
Board of Directors, 1996-2003; Chair, 1996-2000  
Monitoring Committee, 2001-06

CIVIC AND CHURCH ACTIVITIES

- Lutheran Church - Missouri Synod. A variety of district and local congregational roles (not all current), including:  
Vice-President  
Pastoral Care Committee, Chair  
Board of Christian Education  
Board of Stewardship, Chair  
Sunday School Superintendent  
Adult Bible Class Leader and Curriculum Coordinator  
Board of Elders  
Building Committee, Chair  
Board of Outreach, Chair  
Lay Representative, Texas District Convention  
Lay Representative, Missouri District Convention  
Survey Co-coordinator and Executive Committee, Missouri District Funding Initiative Study
- TreeTop Village Property Owners Association  
Board of Directors, 1998-Present; Secretary, 1998-Present

HONORS



- Washington University Distinguished Alumni Award, 2005
- Invited Commencement Speaker, University of Missouri - St. Louis, 2004
- Washington University Engineering Alumni Achievement Award, 1995
- F. J. & Dorothy Van Antwerpen Award, AIChE, 1993
- Malcolm E. Pruitt Award, Council for Chemical Research, 1993
- Rodney D. Chipp Memorial Award, Society of Women Engineers, 1993
- Partnership Award, The Network of Monsanto, 1992
- Founders Award, AIChE, 1989
- T. J. Hamilton Memorial Award for Government Service, AIChE Government Programs Steering Committee, 1988
- Gary Leach Award (to Superfund Task Force), AIChE, 1995
- Career Achievement Award, St. Louis Section, AIChE, 1987
- Robert L. Jacks Memorial Progress Award, AIChE Management Division, 1986
- Invited Plenary Lecturer, AIChE Diamond Jubilee Meeting, 1983
- Fellow, American Institute of Chemical Engineers
- Fellow, Accreditation Board for Engineering and Technology
- Tau Beta Pi
- Sigma Xi
- Phi Theta Kappa

#### INTERNAL MONSANTO COMMITTEES AND TASK FORCES

- Remediation Technology Committee, Chair, 1992-93
- High Hazardous Materials Steering Committee, 1992-93
- The Network Advisory Panel, 1992-93
- The Chemical Group Engineering Operations Board, 1991-93
- The Chemical Group Committee on Workforce Diversity, 1990-93
- The Chemical Company Engineering Operating Committee, 1986-91
- Management Development Quality Improvement Team, 1989-91
- Research Computing Consortium Steering Committee, Chair, 1985
- Project Board - Bioprocess Development Facility, Chair, 1984-85
- Biotechnology Process Engineering Study Group, Chair, 1984
- Emerging Management Issues Task Force, 1980-81
- Product Boards - Acetic Acid, Methanol, Phenol, 1978-79

#### MISCELLANEOUS

- Argonne National Laboratory  
Review Committee - Energy Systems Division, 1992-2003; Chair, 1997
- National Institute for Petroleum and Energy Research Technical Advisory Committee, 1996-97

- Heat Transfer Research, Inc.
  - Board of Directors, 1979-84; 1986-93
  - Long Range Planning Task Force, 1983-86
  - Executive Committee, 1988-93
  - Site Selection Committee, Chair, 1988-89
- Solid Waste Management/Collaborative Research Workshop
  - Invited Participant, Chicago, Illinois, April 30-May 2, 1990
  - Sponsored by U.S. EPA/Amoco/Argonne National Laboratory/Midwest Universities Energy Consortium
- Citations
  - American Men and Women of Science
  - Who's Who in Technology Today
  - Who's Who in America
  - Who's Who in Finance and Industry
  - Who's Who in the Midwest
  - Who's Who in Engineering
- Hobbies
  - The American Civil War
  - Collecting Antique Weapons

#### PUBLICATIONS AND PRESENTATIONS

1. Dynamic Response of a Liquid Level Control System, M. S. Thesis, Washington University, St. Louis (June 1962).
2. "Redox Kinetics of the Peroxydisulfate-Iron-Sulfoxylate Systems," with H. M. Anderson, J. Poly. Sci., 3, 1343-66 (1965).
3. "Empirical Tuning of Kinetic Models," AIChE St. Louis Section One-Day Symposium (March 1969).
4. Noninteracting Control of Chemical Processes, D.Sc. Dissertation, Washington University, St. Louis (June 1972).
5. "The Use of Mathematical Models in the Design and Analysis of Chemical Processes," S. W. Section Mathematics Meeting, Illinois Council of Teachers of Mathematics (March 13, 1976).
6. "Simulation: Its Role and Value," Process Simulation Forum (keynote address), TAPPI Conference, Atlanta, GA (February 26, 1980).
7. "The FLOWTRAN Simulation System," Chemical Engineering Progress, 79, No. 6, 43-53 (June 1983).
8. "Challenges and Constraints in Computer Implementation and Applications," Proceedings of the Second International Conference on Foundations of Computer-Aided Process Design, 47-67, CACHE (1984).
9. "Computers in Chemical Engineering - Advances and Accomplishments," Plenary Address, AIChE Diamond Jubilee Meeting, Washington, DC (November 3, 1983). (Published in Diamond Jubilee Historical/Review Volume, AIChE Symposium Series No. 235, 79, 1983.)

10. "Leadership Styles" with J. D. Nutter, AIChE St. Louis Section One-Day Symposium (April 1984).
11. "The Chemical Engineer in the 1990's: An Industry Perspective," Second International Conference on Chemical Engineering Education, Cambridge, England (April 16, 1987). (Published in I. Chem. E. Symposium Series No. 101, 1987.)
12. "Biotechnology: A New Focus," plenary address, ASEE Chemical Engineering Division Summer School for Chemical Engineering Faculty, Southeastern Massachusetts University, North Dartmouth, MA (August 11, 1987).
13. "Serving a Changing Profession," AIChE Presidential Address, AIChE Annual Meeting, New York, NY (November 17, 1987).
14. "Industrial Biotechnology and Chemical Engineering Education" (with W. G. Bauer), Indo-U.S. Seminar on Chemical Engineering Curriculum, Bangalore, India (January 1, 1988).
15. "Future Opportunities for Chemical Engineers," Panel Discussion, AIChE St. Louis Section One-Day Symposium (April 1988).
16. Presentations at AIChE Local Section and Student Chapter Meetings (in excess of 20 separate presentations, mostly in 1987):
  - a. "Computers in Chemical Engineering"
  - b. "AIChE - Past, Present and Future"
  - c. "Biotechnology and Chemical Engineering"
  - d. "Chemical Engineering: A Changing Profession"
  - e. "Chemical Engineers - Shaping Technologies for Tomorrow"
  - f. "Reflections of a Past, Past President"
  - g. "Waste Reduction - A Chemical Engineering Challenge"
  - h. "Careers for Chemical Engineers"
17. "New Technology Developments in Energy Processing," Fourth Pacific Area Chemical Engineering Congress, Acapulco, Mexico (October 20, 1988).
18. "Looking Backward - Looking Forward: New Technologies in Chemical Engineering," 1988 Annual Meeting - AIChE, Washington, DC (November 29, 1988).
19. "The Chemical Engineer in the 1990's: An Industry Perspective," International Forum on Engineering Education, Washington, DC (November 30, 1988). (See also item no. 11.)
20. "The Monsanto Fellow Program" AIChE Annual Meeting, Chicago, IL (November 13, 1990)
21. "Educating for Change: Industrial and Academic Views of the Undergraduate Curriculum," Panel Discussion, AIChE Annual Meeting, Chicago, IL (November 14, 1990)
22. "Intrinsic Safety and Chemical Process Design," 1992 AIChE Southwest Regional Student Conference, Texas Tech University, Lubbock, TX (February 29, 1992)
23. "New Initiatives for Engineering Education Reform: Engineering Education Coalitions", International Symposium on Engineering Education, Kuwait University (November 15-16, 1995)

24. "ABET Engineering Criteria 2000", Panel discussion on Future Directions for Engineering Education, ASEE North Midwest Section Meeting, North Dakota State University, Fargo, ND (October 4, 1996)
25. "A Proud Legacy - A Vision for Excellence" ABET President's Speech, ABET Annual Meeting, Washington, DC (October 31, 1997)
26. "Re-Engineering Engineering Education", with Richard C. Seagrave, Chemical Engineering Education, 33, 104-5 (Spring 1999)
27. "What Will It Take to Reform Engineering Education?", with John W. Prados, Chemical Engineering Progress (March, 2000)
28. "Mutual Recognition Documents - Opportunities and Challenges", Engineering Foundation Conference on "Engineering Education for Global Practice in the 21<sup>st</sup> Century - Accreditation and Assessment", April 10, 2000, Il Ciocco Hotel and Conference Center, Castelvecchio Pascoli, Italy. Also editor of conference proceedings (with Carl Mchargue)
29. "Leadership - The Skill Most Needed", Topical Presentation, AIChE Spring Meeting, New Orleans, LA (March 2003) also Chemical Engineering Progress (June 2004)
30. "Management Careers and the Chemical Engineer", Student Conference, AIChE Annual Meeting, San Francisco, CA (November 2003)
31. "The Art of Negotiation", Topical Presentation, AIChE Spring Meeting, New Orleans, LA (April 2004)
32. "From Student to Professional: What Does It Mean?", Commencement Address, University of Missouri - St. Louis (May 15, 2004)

#### INTERNAL REPORTS (Monsanto)

1. "Design Manual for Fluid - Solid Reactors I. Fixed Bed Reactors," Central Engineering Report No. 110, April 1972
2. "Pyrolysis Kinetic Studies - A Summary Report," Engineering Report No. 64, March 1, 1969
3. "Hydrocarbon Pyrolysis Kinetics - A Review of the Literature," Engineering Report No. 65, March 1, 1969
4. "Evaluation of a Large Grassroots Styrene Plant" (with G. H. Lovett), Engineering Report No. 53, April 1968
5. "Thermodynamic Analysis of the Cracking Pattern Obtained in the Pyrolysis of Heavy Hydrocarbon Feedstocks," Engineering Report No. 271, August 6, 1965
6. "Kinetic Simulation of the Ethylbenzene Dehydrogenation Process" (with P. E. Parisot), Engineering Report No. 231, July 31, 1964
7. "The Kinetics of the Pyrolysis of Heavy Hydrocarbon Feedstocks," Engineering Report No. 228, August 23, 1963
8. "Final Report on Butanol Recovery From Phthalate Esters" (with J. D. King and C. W. Roos), Research Report No. 2310, February 1, 1959

9. "Final Report on Dodecylaniline Filtration Pilot Plant Studies" (with D. Fleming, W. G. Knapp, P. Vandeven and H. L. Williams), Research Report No. 2195, September 23, 1959
10. "Final Report on Pilot Plant Studies on Orthonitroaniline" (with H. J. Close and W. G. Knapp), Research Report No. 2152, September 12, 1958
11. "Pilot Plant Preparation of N-7797" (with J. F. Adams, W. G. Knapp and G. R. Graham), Research Report No. 2122, July 25, 1958

#### CONTINUING EDUCATION COURSES TAUGHT

- Chemical Engineering Principles for Non-Engineers (2002 - 2003)
- Performance Enhancement Process (1994-96)
- Sexual Harassment Awareness (1992-Present)
- Managing for Performance (1984-85)
- Situational Leadership (1982-83; 1986; 1990)
- Computerized Design Methods Workshop
- Mathematical Modeling Using the Analog Computer (1960-61), (selected lectures)

#### LECTURES IN CONTINUING EDUCATION

- Phase Contacting With Chemical Reaction (1967)
- Chemical Reaction Engineering for Chemists (1968)
- Experimental Design for Kinetic Model Building (1968)
- Selection and Design of Fixed Bed Reactors (1968)
- Hydrocarbon Pyrolysis Kinetics (1968)

#### CONTINUING EDUCATION COURSES TAKEN (internal, unless noted)

- Social Styles; Content and Leader Training (Wilson Learning Corp., 1994)
- Sexual Harassment Awareness Training (1992)
- Diversity Awareness (1991, 1992)
- Consulting Pairs Training (1990)
- Breakthrough Communication (1990)
- Leadership Management (1988)
- Breakthrough Technology (1988)
- Managing a Diverse Workforce (1988)
- Statistical Methods for Improving Quality and Productivity (1988)
- Total Quality Fundamentals (1987)
- Biotechnology and Bioprocesses (AIChE, 1984)
- Managing for Performance (1983)
- Situational Leadership Instructor (1981)
- Situational Leadership (1981)
- Management of Motivation (1980)
- Integration of R&D with Corporate Business Plans and Objectives (Industrial Research Institute, 1979)
- Management Style (1979)
- Economic Concepts (1977)
- Financial Management for Non-Financial Managers (University of Virginia, Colgate Darden Graduate School of Business Administration, 1976)
- Effective Team Management (1976)
- Process and Equipment Reliability (AIChE, 1974)
- Economic Evaluations (1997)

- Statistical Methodology for Chemical Reaction Modeling (AIChE, 1967)
- Management Development (1967)
- Hybrid Computation (Beckman/SDS, 1965)
- Chemical Reaction Engineering (1964)