

Bill B. Elmore, Ph. D., P. E.

Associate Director and Hunter Henry Chair
Dave C. Swalm School of Chemical Engineering
Mississippi State University
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Office (662) 325-2480

EDUCATION

Ph.D. Chemical Engineering, University of Arkansas, Fayetteville, 1990
M.S. Chemical Engineering, University of Arkansas, Fayetteville, 1987
B.S. Chemical Engineering, University of Arkansas, Fayetteville, 1983

REGISTRATION

Registered **Professional Engineer** in Louisiana, Reg. No. 26806

EXPERIENCE

Academic

Interim Director

Jan. 2010-Jul. 2011

Dave C. Swalm School of Chemical Engineering, Mississippi State University

Responsibilities include

- Overall administration of faculty and support staff activities
- Recruitment—students, faculty, support staff
- Planning and reviewing curriculum, academic programs and course content
- Maintaining and actively participating in ongoing departmental research
- Promotion and tenure and performance evaluations
- Preparing and overseeing departmental budgets for general and research operations
- Working with the Bagley College of Engineering Dean and University administration in establishing goals and objectives for the department, college and in meeting the university missions of teaching, research and service
- Serving as a liaison among faculty, administration, alumni, students and the community stakeholders
- Conducting development activities for departmental support, scholarships and special projects
- Continuing Hunter Henry Chair responsibilities

Associate Director

Mar. '08-Jan. '10
Aug, '11-present

Dave C. Swalm School of Chemical Engineering, Mississippi State University

Responsibilities include

- serving as Assessment Program/ABET reporting coordinator while continuing as the Undergraduate Program Coordinator and AIChE Advisor
- planning for annual teaching schedule
- facilities planning and maintenance oversight for Swalm
- pursuing development activities with alumni and industry
- representing the School in administrative duties in the absence of the Director

Associate Professor and Hunter Henry Chair

Aug. 2005-present

Dave C. Swalm School of Chemical Engineering, Mississippi State University

Responsibilities include

- Serving as the Undergraduate Program Coordinator and AIChE Advisor
- Directing renewable fuels and biotechnology-related research for undergraduates and graduates
- Mentoring students and junior faculty

Undergraduate courses taught

- Chemical Engineering Problem Analysis (computational problem solving techniques)
- Chemical Engineering Thermodynamics I and II
- Chemical Engineering Unit Operations Labs I and II
- Chemical Engineering Heat Transfer
- Professional Development Seminar
- Professional Engineering Seminar

Academic Director,

Louisiana Tech University

Sept. 2004-2005

- **Biomedical Engineering**
- **Chemical Engineering**
- **Industrial Engineering**

Sept. 2000-2004

- **Chemical Engineering**
- **Civil Engineering**
- **Construction Engineering Technology**
- **Geosciences**

The Academic Director is a member of the Dean's Leadership Team, administratively responsible for multiple program areas.

Responsibilities included

- Budget planning and direction for College of Engineering and Science (COES)
- Coaching faculty search teams. (During my terms of service, I supervised hiring 10 faculty and several adjunct/visiting faculty).
- Serving multiple academic programs (during a single term of service)
- Directing assessment and accreditation issues
- Managing program involvement and commitment to the COES Strategic Plan
- Directing interdisciplinary faculty search teams for disciplines across COES
- Coaching Program Chairs, and research and curricular development teams
- Evaluating faculty and staff on a quarterly and annual basis
- Preparing ABET EC2000 assessment documents and Self Study reports from faculty input
- Representing program areas to college and university entities
- Facilitating student recruiting, retention and advising—including visits to other campuses for graduate student recruiting
- Participating in K-12 initiatives in collaboration between College of Education and the COES

Program Chair, Chemical Engineering
Louisiana Tech University

June,1997-August 2002

The Program Chair is a nine-month faculty position, facilitating individual program activities.

Responsible for chemical engineering program activities including

- strategic planning
- budgeting
- assessment plan for ABET accreditation
- faculty interviews and hiring
- student organizational activities
- external relations and development
- space and equipment allocations, purchasing and setup
- faculty mentoring and professional development
- curriculum planning and execution
- research and equipment grants

Associate Professor, Chemical Engineering

1996-2005

Louisiana Tech University

Courses taught and responsibilities continuing as with Assistant Professor rank. Promotion to Professor rank approved by Louisiana Education Board of Supervisors at their August 2005 meeting.

Assistant Professor, Chemical Engineering

1990-1996

Louisiana Tech University

Undergraduate courses taught:

- Senior capstone design sequence
- Chemical Engineering Reactor Design
- Chemical Engineering Thermodynamics II
- General Engineering Thermodynamics I
- Chemical Engineering Fluids, Heat Transfer, and Mass Transfer Labs
- Unit Operations I (fluid mechanics and applications)
- Unit Operations II (heat transfer and applications)
- Environmental Chemodynamics (an environmental transport course)
- Undergraduate Seminar
- Biochemical Engineering
- Engineering 120 series (a three-course sequence focused on engineering problem-solving in our *Integrated Freshman Engineering* program)

Graduate courses taught:

- Advanced Chemical Engineering Thermodynamics
- Advanced Chemical Engineering Reactor Design
- Analytical Methods for Conductive Heat Transfer (mechanical engineering)

Instructor, Mechanical Engineering

1989-90

John Brown University

Undergraduate courses taught:

- Introduction to Engineering
- Thermodynamics I
- Statics
- Dynamics
- Mechanical Engineering Instrumentation Laboratory

Faculty Research Associate,**1998-2005***Institute for Micromanufacturing, Louisiana Tech University*

- An active member of “Departmental Excellence through Faculty Excellence” (DEFE) research faculty (2000 to 2005)
- Development of micro- and nano-scale systems for chemical process technologies
- Study of enzymes in polymer-based microreactors and the encapsulation into nanoparticles.

Advising activities**Graduate Student Supervision**

Name	Degree	Topic	Enroll Date	Award Date
Cynthia F. Dickey	Ph.D. Bm.E. LA Tech	<i>Design, Modeling, Fabrication and Testing of an Immobilized Enzyme Microreactor</i>	1995	May, 2000
Zonghuan Lu	Ph.D. Engr. LA Tech	<i>Fabrication and performance of a Polydimethylsiloxane-based immobilized enzyme microreactor</i>	1999	February, 2003
Sandeep Sayal	M.S. Ch.E. LA Tech	<i>Advanced Scanning Electron Microscopy & Energy Dispersive Spectroscopy Techniques for Sulfur Analysis in Coal</i>	1989	May, 1991
Glen Jones	M.S. Ch.E. LA Tech	<i>Microbial Liquefaction of Louisiana Lignite</i>	1990	August 1992
David Krueger	M.S. Ch.E. LA Tech	<i>Studies & Methods for Increasing the Desulfurization Activity of Thiobacillus ferrooxidans on Bituminous Coal</i>	1991	August, 1993
Xuejin Chen	M.S. Ch.E. LA Tech	<i>Cellulase Activity of Fungi Acting on Refined Cellulose and Municipal Solid Waste</i>	1990	August, 1992
Sanjoy Silva	M.S. Ch.E. LA Tech	<i>Cellulase Activity of Trichoderma reesei (RUT-C30) on Municipal Solid Waste</i>	1992	March, 1995
Madhukar Gundamaraju	M.S. Ch.E. LA Tech	<i>Screen Procedures for Microbial Conversion of Coal Derived Synthesis Gas</i>	1992	November, 1995
Hui Zhan	M.S. Ch.E. LA Tech	<i>Bioliquefaction of Louisiana Lignite Pretreated with Nitric Acid</i>	1993	February, 1996
Paras Trivedi	M.S. Ch.E. LA Tech	<i>Biological Conversion of Carbon Monoxide to Liquid Chemicals & Fuels using Anaerobic Bacterial Culture, PS-1, Isolated from Petroleum-contaminated Soil</i>	1993	August 1996
Ernest Fegley	M.S. Ch.E. LA Tech	<i>Fate of Crude Oil Applied to Reconstituted Soil Cores</i>	1995	February, 1997
Gowrisankar Sathanandam	M.S. Ch.E. LA Tech	<i>Optimizing the Biological Production of Ethanol from Carbon Monoxide using Clostridium ljungdahlii</i>	1996	November, 1998
Suruchi Chopra	M.S. Ch.E. LA Tech	<i>Optimization of a process for preserving viability of bacterium SG-3—a bacterial algicide</i>	2002	May 2004
Jie Wen	M.S. Ch.E. LA Tech	<i>Comparison of Layer-by-Layer Self Assembly Method with Direct Incorporation of Enzyme in PDMS Microreactors</i>	2003	August 2004

Graduate Student Supervision...

Name	Degree	Topic	Enroll Date	Award Date
Shannon Robinson	M. S. Ch.E. LA Tech	<i>CFC and HCFC Recycling by Distillation</i>	Fall 2004	Winter 2006

Liu Jen Chen	M.S. Ch.E. Miss State	<i>Production of fermentable sugars and lipids by microalgae from secondarily treated wastewater</i>	Summer 2008	May, '11
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Undergraduate Advising

A primary focus of my academic career has been to provide careful mentoring and advising of each and every student I come in contact with daily. I seek to be an advocate and friend to each student—whether helping them to decide on an academic major, navigating the sometimes arcane world of higher education, or choosing a career path. I devote a significant portion of my time to the pursuit of advising. A particularly gratifying recognition of this devotion has been the expressed appreciation and recognition of my students and peers in academe.

Both at Louisiana Tech University and at Mississippi State University, I have gravitated toward the academic advisement of most of our chemical engineering undergraduates. This is an outgrowth of the natural relationships I develop with students through daily interaction in our student chapter, the American Institute of Chemical Engineers (AIChE) to which I have served as Faculty Advisor for my entire career in chemical engineering education. While I readily, and frequently encourage students to seek out opportunities for career counseling with the chemical engineering faculty, the centralization of academic advising from a single individual brings a uniformity of communication both with the students and with university representatives (e.g. College Undergraduate Coordinator and Registrar) monitoring students' academic progress. Additionally, this allows me to monitor student progress and facilitate industry queries for co-op and intern opportunities.

HONORS/AWARDS

AIChE Fellow; nominated by Mark White (MSU Professor Emeritus and former Director, Swalm School of Chemical Engineering) and five peer AIChE Fellows or Senior Members;

Inducted @ national AIChE meeting, November, 2010

National AIChE Outstanding Student Advisor Award (nominated); nominated by chemical engineering faculty, staff and students

2009-'10

2008-'09

2007-'08

MSU Irvin Atly Jefcoat Excellence in Advising Award (nominated);

2008-'09

2009-'10

MSU IMAGE/NSBE Faculty Appreciation Award, Bagley College of Engineering Diversity Programs, Mississippi State University

2010 & 2011

2009 ASEE First-Year Programs Division; Best Paper Award (2nd Place); ASEE Annual Conference, Austin, TX; Strawderman, L.; A. Salehi, and B. B. Elmore, *Exploring the Impact of First-Year Engineering Student Perceptions on Student Efficacy*

2006 Thomas C. Evans Instructional Paper Award & Outstanding Paper Award, ASEE Southeastern Section, April 2-4, 2006, Tuscaloosa, AL; Adrienne R. Minerick, Ebonye-Rosa T. Allen, and Bill B. Elmore; *Talking & Working for Diversity When You Don't Represent a Minority Demographic*

Hunter Henry Endowed Chair, Mississippi State University,	August, 2005
Promotion to Professor rank approved, Louisiana Tech University	August, 2005
Louisiana Engineering Foundation Faculty Professionalism Award presented by the Louisiana Engineering Foundation	January 2003
Louisiana Tech University Outstanding Faculty Advisor	1998-99
Faculty representative (elected position) to COES Eng. & Sci. Foundation	1999-2002
R. William Upchurch Distinguished Associate Professor	1998-2005
T. L. James Outstanding Achievement Award In Teaching awarded by COES Freshman Integrated Curriculum Team	1997-98
University Senate President	1996-97
University Senate Vice-President	1995-96
Louisiana Tech College of Engineering Outstanding Achievement Award in Service	1994-95
ASEE National Effective Teaching Institute Selected by Dean as among COE faculty, Champaign-Urbana, IL,	June, 1993
ASEE Chemical Engineering School for Faculty Selected by Dept. Head from among ChE faculty, Bozeman, MT,	August, 1992
T. L. James Outstanding Achievement Award in Instruction Awarded by the College of Engineering	1991-92

Funded Research and Education projects

Louisiana Tech

Project Director—**Louisiana Tech Student Technology Fee Board**; *Funding for Bogard Hall computer laboratories*; **\$70,909**; October, 2004; proposal funded for 35 computers, 2 LCD projectors and security surveillance equipment to equip two computer laboratories for computational modeling and simulation instruction and research.

Project Staff—**Louisiana Department of Education(LDE)/Louisiana Systemic Initiatives Program (LaSIP)**; *La Gear Up Summer Camps*; **\$201,323**; June 1, 2003 through August 30, 2003. I worked on project team for teaching math, science and engineering principles to junior high students through field and laboratory exercises.

Project Staff—**Louisiana Department of Education(LDE)/Louisiana Systemic Initiatives Program (LaSIP)**; *La Gear Up Summer Camps for Teachers*; **\$58,655**; June 1, 2003 through October 31, 2003. I worked on project team for teaching math, science and engineering principles to junior high students through field and laboratory exercises.

Co-Investigator—Louisiana Tech's **Center for Entrepreneurship and Information Technology (CEnIT)**; *Engineering Design and Rapid Prototyping for Education Majors*; **\$10,000**; February-May, 2003. Worked with Bill Jordan through our Engr. 189C course—teaching science, math and engineering principles to pre-service teachers.

Project co-director; **Louisiana Tech Student Technology Fee Program**; *Joint project between Chemical Engineering and Electrical Engineering Technology for enhancement of process control laboratories*; **\$20,000**; 2002-03 academic year. Oversaw purchase of controls equipment and jointly supervised senior chemical engineering capstone design teams through the installation of this equipment on existing laboratory units.

Co-Investigator—**NASA**; *NOVA Phase III: Dissemination of our Model—A Course in Engineering Science Problem Solving for Future Teachers*; **\$12,929 additional funding**; June, 2002 through November, 2002. Work with Bill Jordan through our Engr 189C course.

Principal Investigator—**Board of Regents—Graduate Fellows Program**; *Graduate Fellows for the Engineering, CAM, and BmE Ph.D. Programs*; with Dean Les Guice; **\$70,000**; awarded July, 2001.

Co-Investigator—**NASA**; *NOVA Phase II: Dissemination of our Model—A Course in Engineering Science Problem Solving for Future Teachers*; **\$55,361**; June, 2001 through November, 2002.

Co-Investigator—**Louisiana Board of Regents Enhancement**; *Implementing an Experimental Design Process in the Senior Chemical Engineering Design Curriculum*; **\$35,285**; July, 2001. Collaboration with Jim Palmer, Senior Capstone Design instructor.

Other-Investigator—**Louisiana Board of Regents Enhancement Fund**; *Introduction of Peer Instruction into Introductory Chemistry classes*; **\$12,778**; July, 2001.

Other Investigator—**Louisiana Board of Regents Departmental Excellence through Faculty Excellence (DEFE)** program: *One-Two-Three Go—A Strategic Initiative for Rapid Research Competitiveness in Microsystems Development*; **\$142,275 (renewable annually)**; salary enhancement for research faculty working through the *Institute for Micromanufacturing*, September 2000.

Co-Principal Investigator—**NASA**; *NASA Opportunities for Visionary Academics*; A one-year program for Education, Science, Mathematics, Engineering, and Technology Faculty Involved in the Content Education of Future K-12 Teachers; **\$51,505**, October, 1999.

Principal Investigator and Program Manager—**Louisiana Department of Labor**; *Incumbent Worker Training Program—Manufacturing Skills Development*; A two-year joint program with UOP in Shreveport, Louisiana; **\$213,482**, beginning November, 1999.

Other Investigator—*Action Agenda*; **NSF** project for institutionalizing Tech's Integrated Freshman and Sophomore curriculum; (Jim Nelson and Bernd Schroeder—PI's); **\$600K**, beginning August, 1999; faculty member teaching in the Integrated Engineering program.

Principal Investigator—**Louisiana Board of Regents Support Fund (LA BoRSF)**; LEQSF(1999-00)-ENH-TR-32; *An Interdisciplinary Laboratory for the Integrated Freshman and Sophomore Engineering Curriculum*; **\$30,313**; beginning June, 1999.

Principal Investigator—**LA BoRSF**; *Acquisition of a Modern High Performance Liquid Chromatography System*—Undergraduate Enhancement Proposal; 12 month contract; **\$52,718**; '98-'99 academic year.

Other Investigator—**Department of Defense (DOD)**; *The Development of a Center for Advanced Mold/Mask Processes and Applications for the Miniaturization Technologies*. While primarily an equipment proposal, startup funds were included for research teams to developing micromanufacturing projects. Begun in February 1996, this served as the foundation for the current emphasis of IfM on microreactor systems. Built apparatus and support equipment for starting up microreactor project. **\$1, 994, 501**.

Other Investigator—**Louisiana Applied Oil Spill R&D Program**; *Baseline Experimental Studies for Onshore Oil Spills*; 24 month contract; **\$118,697**, 1995-96. Established some analytical procedures and directed studies for assaying biological activity of microbial cultures subjected to oil spills upon soil.

Principal Investigator—**Louisiana Education Quality Support Fund (LEQSF)**; *Microbial Solubilization of Louisiana Lignite*—a three-year project; **\$90,893**; 1991.

Principal Investigator—**Department of Energy**; *Biodesulfurization Techniques: Application of Selected Microorganisms for Organic Sulfur Removal from Coals*—42 month contract; **\$385,306**; through January 1992.

Principal Investigator—**Louisiana Tech** summer grants and IfM summer support; **\$17,600** for various biochemical engineering related research projects, 1992-2001.

Proposal activity (submitted)

Mississippi State University

NSF—STEP: A Strategic Initiative for Expanding Mississippi's Engineering Graduates (working title); \$1,998,940 for 60 months, submitted September 28, 2010

NSF—Math and Science Partnerships—Promoting Robotics in Engineering and Physics in Mississippi (PREP-MS) Program. \$2,378,071 for 60 months, March, 2008.

NSF—REU Site: Collaborative Research—The bonds between us. REU renewal grant. \$385,013 for 36 months.

NSF—Math and Science Partnerships—Promoting Robotics in Engineering and Physics in Mississippi (PREP-MS) Program. \$2,378,071 for 60 months, March, 2006.

Louisiana Tech

NSF—Bridges for Engineering Education (NSF 03-561); *Bridging the Gap—A model for improving technological literacy in SMET K-12 education*; Senior Investigator (assembled proposal writing team; wrote initial draft of technical narrative) **\$100,000** planning grant; June 2003 (received one “excellent”, one “very good” and two “fair” reviews), revised and resubmitted March, 2004.

NSF—Undergraduate Research Centers (NSF 01-10); *Research Training for Undergraduates—Engineering, Science and P-12 Pre-service Teachers*, Co-PI; (assembled proposal writing team; wrote initial draft of technical narrative) **\$50,000** planning grant; February 2004.

BoRSF – Enhancement Program; *Infrared Spectrometer for Chemical Engineering Education and Research*; **Co-PI**; \$37,338; October, 2003.

DARPA; *Water Harvesting for the “In-field” Soldier*, PI; submitted as subcontract with **Computational Fluid Dynamics Research Corporation (CFDRC)**, Huntsville, AL; \$766,022; June 2002.

La Health Excellence Fund; *Immobilized Enzyme Bioreactors for In vivo applications*; Co-PI with Ron Besser; submitted as a segment of a larger Bio-MEMS proposal; December, 1999.

BoRSF Research and Development Fund; *Microreactor Systems Analysis*; Co-PI with Ron Besser; October, 1999.

Board of Regents LaSIP/LaCEPT Program; *Experimental- and Computer-based Education for an Integrated Engineering Curriculum*; Co-PI; \$23,335, April, 1998.

Louisiana Education Quality Support Fund—Enhancement; *Integration of GC-MS into the Chemistry Curriculum*; Co-PI; \$90,000, 1997.

(LEQSF)—Enhancement; *Equipment for Development and Analysis of Advanced Chemical Engineering Processes*; Principal Investigator; \$257,000, 1996.

LEQSF—R&D; *Biological Conversion of Greenhouse and Synthesis Gas Components to Useful Fuels and Chemicals*; Principal Investigator; \$95,000, 1996.

Louisiana Systemic Initiatives Program (LaSIP); *Design, Technology and Engineering for America’s Children*; Principal Investigator; \$151,842, 1996.

Department of Energy—Program for the Support of Advanced Coal Research at Colleges and Universities; *Microbial Conversion of Coal Synthesis Gas to Useful Fuels and Chemicals*; Principal Investigator; \$195,693, 1995.

LEQSF—Industrial Ties; *Environmentally Benign Paper Pulping Through Biomechanical Means*; Principal Investigator; \$250,000, 1994.

NSF—EPSCoR; *The Effect of Coal Beneficiation Process on the Rheology and Atomization of Coal-Water Slurries*; Co-PI in conjunction with faculty at Grambling State University; \$69, 872, 1993.

LEQSF—R&D; *Cellulase Production: Microorganism Selection and Feedstock Effects on Productivity*; Principal Investigator; \$115,528, 1992.

DOE—EPSCoR; *Traineeship Grant for Louisiana*; Co-Investigator with faculty from Louisiana State University, Tulane, Southern, and University of Southwestern Louisiana; \$500,000, 1992.

DOE—EPSCoR; *Cluster for Energy Recovery and Volume Minimization from Municipal Solid Waste*; Co-Investigator with faculty from Louisiana State University and University of New Orleans; \$841,089, 1992.

LEQSF—Enhancement; *Equipment to Complete a Biotechnology Laboratory*; Principal Investigator; \$90,000, 1992.

Louisiana Catfish Promotion and Research Board; *Control of Disease and Off-Flavor in Louisiana Farm Raised Catfish by Water Quality Improvement*; Co-PI; \$20,000, 1992.

LEQSF—Industrial Ties; *Improved Aeration in Aquaculture*; Co-PI; \$170,000, 1992.

LEQSF—R&D; *Bioremediation of Refinery Sites through Use of a Packed-Bed Biofilm Reactor*; Principal Investigator; \$325,000, 1991.

Industrial Experience

Incumbent Worker Training Program Director, UOP, *Shreveport, LA* Oct '99-Sep '01

- Evaluating plant processes and procedures for technologies and processes.
- Design of training modules appropriate for introducing non-engineering plant personnel to chemical engineering fundamentals and leadership principles.
- Delivery of experimental-, computer- and team-based training.

Plant Management Training/Department Supervisor, *Cargill Inc.,* Springdale, AR '85-'87

- Supervised crews of 50 in multiple departments; selecting and training new hires.
- Supervised and provided “hands-on” training for employees in all phases of the processing facility—including live poultry processing, product development, by-product rendering, warehouse storage, and shipping.
- Interviewed, hired, trained new employees.
- Lead group safety training and instruction.
- Conducted Time/Motion studies to improve production efficiencies and reduce sanitation costs.
- Worked with Research and Development and Quality Control for the development of processing requirements and specifications.
- Assisted in design and staffing of new production equipment layout.
- Researched methods for process improvements for savings in operation costs of \$50,000/yr and automation of packaging process for cost reductions.

Plant Engineering, *Arkansas Power & Light,* Summer, 1981
Projects included electrostatic precipitator inspections, cooling tower heat balances, coal yard and boiler platform surveying.

Coop Education Student, *Dow Chemical,* Freeport, TX, Jan.- May 1980
Worked in R & D conducting continuous exchange resin studies, and chemical separation and analysis using film evaporators and chromatographic techniques.

Professional Affiliations

American Institute of Chemical Engineers
American Society for Engineering Education
American Chemical Society
National Academic Advising Association

Publications

1. Elmore, Bill B., *A freshman design course using LEGO® NXT Robotics*, **Chemical Engineering Education**, Spring 2011, **45:2**, pp. 86-92.
2. Scott R. Forrest, Bill B. Elmore, James D. Palmer; *Activity and lifetime of organophosphorous hydrolase (OPH) immobilized using layer-by-layer nano self-assembly on silicon microchannels*; **Catalysis Today**; **120:1**; 30 January 2007, p.p. 30-34
3. Bailey, Rob; Frank Jones, Ben Fisher and Bill Elmore; *Enhancing Design of Immobilized Enzymatic Microbioreactors Using Computational Simulation*; **Applied Biochemistry and Biotechnology**; 2005; **121-124**, p.p. 639-652
4. Forrest, Scott R.; Bill B. Elmore; James D. Palmer; *Activity and Lifetime of Urease Immobilized using Layer-by-layer Nano Self-assembly on Silicon and Polydimethylsiloxane Microchannels*; **Applied Biochemistry and Biotechnology**; 2005; **121-124**, pp. 85-92
5. Jordan, W.M., B. B. Elmore, C. Sundberg; *A Model for Reform in Teaching in Engineering and Technology: With a Focus on Prospective Elementary Teachers*; in **Research in Science Education: Reform in Undergraduate Science Teaching for the 21st Century**; D.W. Sunal, E.L. Wright, & J. Bland (Eds.); Information Age Pub. Inc., Greenwich, CT, to be published spring 2004, ISBN 1-930608-85-3
6. Jones, F.; S. Forrest; J. Palmer; Z. Lu; J. Elmore, Bill B. Elmore; *Immobilized enzyme studies in a micro-scale bioreactor*, **Applied Biochemistry and Biotechnology**; 2004; **113-116**; pp. 261-272
7. Disawal, Sandeep; Jianhong Qui; Bill B. Elmore; Yuri M. Lvov; *Two-step sequential reaction catalyzed by layer-by-layer assembled urease and arginase multilayers*; **Colloids and Surfaces B: Biointerfaces**; May 28, 2003; Vol. **32**; pp. 145-156
8. Elmore, B. B., Zonghuan Lu, and Francis Jones, *The development of a novel micro-scale system as an immobilized enzyme bioreactor*, **Applied Biochemistry and Biotechnology**, **98-100**, p.627-632, 2002
9. Jones, Francis J, and B. B. Elmore; *Incorporating Chemical Process Miniaturization into the ChE Curriculum*; **Chemical Engineering Education**, Graduate Issue, **34/4**, 316-319, 325, Fall 2000
10. McCurdy, M, J. B. Hillard, B. B. Elmore; *Baseline Experimental Studies for Onshore Oil Spills*; Louisiana Applied Oil Spill Research and Development Program (OSRADP) Final Technical Report on Subcontract No. R113774; 1997
11. Madhukar, G. R., B. B. Elmore and H. K. Huckabay; *Microbial Conversion of Synthesis Gas Components to Useful Fuels and Chemicals*; **Applied Biochemistry and Biotechnology**, **57/58**, 243-251, 1996
12. Huckabay, H. K., S. A. Behbahani, B. B. Elmore, F. J. Jones, C. M. Sheppard, R. H. Thompson; *Combining of Engineering Science and Design*; **Proceedings of the ASEE Gulf-Southwest Section Meeting**, 159-166, Beaumont, TX, March, 1995
13. Elmore, B. B.; *Microbial Liquefaction of Louisiana Lignite*; Final Project report for the State of Louisiana LEQSF-8g (Board of Regents Support Fund) research and development program (Contract #LEQSF(1991-94)-RD-A-20), February, 1995
14. Silva, S., B. B. Elmore and H. K. Huckabay; *Cellulase Activity of Trichoderma reesei (RUT-C30) on Municipal Solid Waste*; **Applied Biochemistry and Biotechnology**, **51/52**, 145-153, 1995

15. Maxey, A., A. Rao, B. B. Elmore and H. K. Huckabay; *Microbial Liquefaction of Lignite Pretreated with Dilute Acid at Elevated Temperature and Pressure*; **Applied Biochemistry and Biotechnology**; **45/46**, 81-91, 1994
16. Elmore, B. B.; *Biodesulfurization Techniques: Application of Selected Microorganisms for Organic Sulfur Removal from Coals*; Final Project Report submitted to the Pittsburgh Energy Technology Center, Department of Energy, approved for publication and dissemination March, 1994
17. Huckabay, H., B. B. Elmore, C. M. Sheppard, M. W. Hsieh, and J. Lorenz; *Computer Enhanced Applications of Engineering Economy*; Proceedings of the Annual Conference of the American Society for Engineering Education, New Orleans, LA, June, 1991
18. Huckabay, H. K., D. W. Braswell, G. F. Pyle, B. B. Elmore, M. W. Hsieh; *Alternative Explosives*; Final Project Report submitted to the Thiokol Corporation, Minden, LA, September, 1990
19. Klason, K. T., B. B. Elmore, J. L. Vega, M. D. Ackerson, E. C. Clausen, and J. L. Gaddy; *Biological Production of Liquid and Gaseous Fuels from Synthesis Gas*; **Applied Biochemistry and Biotechnology**, **24/25**, 857-873, 1990
20. Vega, J. L., S. Prieto, B. B. Elmore, E. C. Clausen, and J. L. Gaddy; *The Biological Production of Ethanol from Synthesis Gas*; **Applied Biochemistry and Biotechnology**, **20/21**, 781-797, 1989

Invited Presentations and Workshops

1. Bill B. Elmore and three AIChE female students—Betsy Barber, Bonnie O’Neal and Lauren Hartley; *Women In Science and Technology Workshop* (hosted by East Mississippi Community College); LEGO robotics workshop for middle and high school women interested in STEM-related careers; February, 2011
2. Bill B. Elmore and three AIChE female students—Betsy Barber, Ruthie Franke and Laura Davis; *Women In Science and Technology Workshop* (hosted by East Mississippi Community College); LEGO robotics workshop for middle and high school women interested in STEM-related careers; February, 2010
3. Bill B. Elmore and three AIChE female students—Laura Davis, Erin Casey and Betsy Barber; *Women In Science and Technology Workshop* (hosted by East Mississippi Community College); LEGO robotics workshop for middle and high school women interested in STEM-related careers; February, 2009
4. Bill B. Elmore, *Introducing STEM Middle School Teachers to LEGO Robotics*, training program; invited by Mississippi State University’s Research and Curriculum Unit, May 30, 2008
5. Bill B. Elmore, *LEGO Robotics workshop*; Sudduth Elementary; Starkville, MS; May 20, 2008
6. Bill B. Elmore, *LEGO Robotics workshop*; Fifth Street Elementary; West Point, MS; April 25, 2008
7. Bill B. Elmore, *LEGO Robotics workshop*; West Clay Elementary; Montpelier, MS; April 21, 2008
8. Bill B. Elmore, *LEGO Robotics workshop*; Oak Grove Middle and High Schools; Hattiesburg, MS; April 11, 2008
9. Bill B. Elmore; *LEGO Robotics Workshop*; Middle School students and STEM teachers; Dave C. Swalm School of Chemical Engineering; March 26, 2008

10. Bill B. Elmore and Emma Seiler; *LEGO Robotics Workshop*; Tupelo Middle School; Tupelo, MS; February 29, 2008
11. Bill B. Elmore and Emma Seiler; *Women In Science and Technology Workshop* (hosted by East Mississippi Community College); LEGO robotics workshop for middle and high school women interested in STEM-related careers; February 22, 2008
12. Bill B. Elmore (and Amer. Inst. Chem. Engrs. Student organization—AIChE); *First Annual Boy Scout Merit Badge Day*; directed events for 86 Boy Scouts completing two engineering and science related Merit Badges; Dave C. Swalm School of Chemical Engineering; February 2, 2008
13. Bill B. Elmore and Emma Seiler; *LEGO Robotics Workshop*; Mississippi Science Teachers Association; October 22, 2008
14. Bill B. Elmore; *ABET Report Preparation and Assessment Program Evaluation*; University of Tennessee—Chattanooga; work with Chemical Engineering Program Chair for their upcoming ABET visit; April 3-4, 2007
15. Bill B. Elmore; *LEGO Robotics Workshop*; Forest Hill High School; Jackson, MS; March 26, 2007
16. Bill B. Elmore; *LEGO Robotics Workshop*; Northwest Rankin Middle and High Schools; Flowood, MS; March 9, 2007
17. Bill B. Elmore and Emma Seiler; *Women In Science and Technology workshop* (hosted by East Mississippi Community College); LEGO robotics workshop for middle and high school women interested in STEM-related careers; February 23, 2007
18. B. B. Elmore, *Micro-scale reactor systems and their use with immobilized enzymes*, invited presentation to the College of Engineering & Computer Science, University of Tennessee—Chattanooga, April 8, 2003
19. Jordan, W., and Elmore, B.; *NOVA Phase II Progress Report*, presented at NASA Opportunities for Visionary Academics (NOVA) Leadership Development Conference (LDC), Greenbelt, MD, March 2002
20. B. B. Elmore, *Heterogeneous catalysis in a micro-scale reactor fabricated from a biologically-active plastic*, presented to College of Engineering, University of Tennessee—Chattanooga, April 6, 2001
21. Jordan, W., Elmore, B., and Silver, D.; *An Example of an Exemplary NOVA Course*, presented at NASA Opportunities for Visionary Academics (NOVA) conference, Stennis Space Center, MS, November 2001
22. Elmore, B. B., W. Jordan, D. Silver; *Action Research and Analysis of a Course in Engineering Problem Solving for Future Teachers*, NASA Opportunities for Visionary Academics (NOVA) Leadership Development Conference (LDC), Arlington, VA, January 2001
23. Jordan, W., B. B. Elmore, Debbie Silver; *Development of Web-based Course Material for a Course in Engineering Problem Solving for Future Teachers*, NASA Opportunities for Visionary Academics (NOVA) Leadership Development Conference (LDC), Arlington, VA, January 2001
24. Elmore, B. B.; *Strategic Planning for the School of Human Ecology, Louisiana Tech University*—Conducted a day-long, invited workshop to assist members of the School of Human Ecology in developing a strategic plan, Fall '97

Presentations/Conference Proceedings

1. Elmore, Bill B.; *Design and the Robotically-controlled "Mini-plant" in Freshman Chemical Engineering*; to be presented at the 2011 Frontiers in Education conference; Rapid City, SD; October 12-15, 2011.
2. Toghiani, Rebecca and Bill B. Elmore; *Examining Current and Historical Events in a Freshman Chemical Engineering Seminar*; to be presented at the 118th ASEE Annual Conference and Exposition, Vancouver, British Columbia, June 26-29, 2011.
3. Toghiani, Rebecca and Bill B. Elmore; *Freshman Seminar in Chemical Engineering: Strategies for Student Success*; to be presented at the ASEE Southeastern Regional conference; The Citadel, Charleston, SC; April 10-12, 2011.
4. Liu, Jen, Todd French, Rafael Hernandez, Bill B. Elmore*; *Biofuels production from microalgae: A study of natural isolates from local wastewater sources*; presented at the 32nd Symposium on Biotechnology for Fuels and Chemicals; Clearwater Beach, FL; April 19-22, 2010.
5. Dana Franz and Bill B. Elmore; *Work in Progress—Collaborative Outreach to "at-risk" Middle School Students using LEGO Robotics*; presented at the 39th ASEE/IEEE Frontiers in Education Conference; San Antonio, TX; October 18-21, 2009.
6. Minerick, A.R., K. B. Walters, B. B. Elmore, R. Toghiani, P. Hill, R. Hernandez, H. Toghiani and T. French; *Cross-Curricular Topic Inventory: Strategic Topic Placement for Concept Reinforcement & Enhanced Student Accountability*; presented at the ASEE Annual Meeting; Austin, TX, June 14-17, 2009.
7. Strawderman, L., A. Salehi, and B. B. Elmore, *Exploring the Impact of First-Year Engineering Student Perceptions on Student Efficacy*, presented at the ASEE annual meeting; Austin, TX, June 14-17, 2009.
8. Lui, Jen, Todd French and Bill B. Elmore, *Microalgae production of lipids and starches for bio-fuel production*, presented at the 31st Symposium on Biotechnology for Fuels and Chemicals, May 2009
9. Bill B. Elmore; *Enabling Students to Capture the "Spirit" of Education*, presented at the NACADA Region IV advising conference, Mississippi State University, March 15-17, 2009
10. Bill B. Elmore, Matthew Young and Stephanie Rodgers; *Growth and production studies of Botryococcus sudeticus (UTEX 2629) and other microalgae on Secondary Treated Wastewater*; presented at the 30th Symposium on Biotechnology for Fuels and Chemicals; New Orleans; May 4-7, 2008
11. Bill B. Elmore, *Introducing Engineering Concepts to Freshmen through LEGO Robotics*, presented at the AIChE Annual Meeting, Salt Lake City, Nov. 4-9, 2007
12. Davis, P., M. Wall, M. Young, T. French and B. B. Elmore; *Tertiary treatment of wastewater for lipids production and carbon dioxide sequestration*; presented at Sandia National Laboratory; July, 2007.
13. Reddy, Shaila, L. Dale Snow, Bill B. Elmore*, and James D. Palmer; *Improved Analytical Methods and Quantifying Mass Deposition of Urease Immobilized using Layer-by-layer Nano Self-assembly*; presented at the 28th Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN, Apr. 30-May 3, 2007.
14. Davis, P., M. Wall and B. B. Elmore; *Valuable Products from Pond Scum?*; presented at the AIChE Southern Regional student conference; Columbia, SC; Mar. 2007.

15. Bill B. Elmore, *LEGO NXT Robotics—a platform for teaching engineering concepts in a problem-based learning environment*, presented at the AIChE Annual Meeting, San Francisco, Nov. 2-5, 2006.
16. Craft, B., P. Davis, M. Wall and B. B. Elmore; *Growth of **Botryococcus braunii** microalga on secondarily treated wastewater*; presented at the First Annual MSU Biofuels Conference; Mississippi State University, Mississippi State, MS; August 2006.
17. Bill Jordan (Baylor) ; Walter Bradley (Baylor); Bill B. Elmore (Mississippi State University); *Mentoring New Faculty: What Works and What Does not Work*, presented at the ASEE national meeting, Chicago, June, 2006
18. Bill Jordan (Baylor); Bill B. Elmore (Mississippi State University); *Engineering Ethics and Moral Theories : A Student Perspective*, , presented at the ASEE national meeting, Chicago, June, 2006
19. Adrienne Minerick and Bill B. Elmore; *Using Research As a Tool for Recruiting*; , presented at the ASEE national meeting, Chicago, June, 2006
20. Adrienne R. Minerick, Ebonye-Rosa T. Allen, and Bill B. Elmore; *Talking & Working for Diversity When You Don't Represent a Minority Demographic*; presented at the ASEE SE Section conference, April 2-4, 2006 University of AL, Tuscaloosa, AL (received the overall *Outstanding Paper* award for the conference)
21. Jaricus A. Whitlock¹, Rafael Hernandez¹, Todd French¹, Bill B. Elmore¹, Mark Bricka¹ and Sandun Fernando²; *In-Situ Transesterification of Soybeans*; (1) Dave C. Swalm School of Chemical Engineering, Mississippi State University, (2) Agricultural and Biological Engineering Department, Mississippi State University, Mississippi State, MS 39762; Catalysis and Reaction Engineering Division, 2006 AIChE National Meeting, November 11-17, San Francisco
22. Jordan, W., Bill B. Elmore, Henry Cardenas, and Chad O'Neal, *Using a Materials Concept Inventory to Assess and Introductory Materials Class: Potential and Problems*, presented at the June 2005 ASEE meeting, Portland, OR, in CD proceedings (no page numbers)
23. Jordan, William and Bill B. Elmore, *Making Personal Technology Work Appropriately*, presented at the Annual Meeting of the American Scientific Affiliation, Grantham, PA, August, 2005
24. Jordan, William; Bill B. Elmore, Kelly Crittenden, Laura Wesson and Norm Pumphrey; *Assessing Changes in Student Attitudes and Knowledge in an Engineering for Educators class*; presented at the June 2005 ASEE meeting, Portland, OR, in CD proceedings (no page numbers)
25. Bailey, Rob; Frank Jones, Ben Fisher and Bill B. Elmore; *Immobilized Enzymatic Microbioreactor Design Enhancement Using Computational Simulation*; presented at the 26th Symposium on Biotechnology for Fuels and Chemicals, Chattanooga, TN; May 5-8, 2004
26. Forrest, Scott R.; Bill B. Elmore; James D. Palmer; *Activity and Lifetime of Urease Immobilized using Layer-by-layer Nano Self-assembly on Silicon and Polydimethylsiloxane Microchannels*; presented at the 26th Symposium on Biotechnology for Fuels and Chemicals, Chattanooga, TN; May 5-8, 2004
27. Palmer, J*, R. Bailey[†], F. Jones[†] and Bill B. Elmore*, *The Effect of Enzyme Attachment Method on Biomicroreactor Design and Operation*, presented at the 26th Symposium on Biotechnology for Fuels and Chemicals, Chattanooga, TN, May 5-8, 2004 (*-Louisiana Tech University, [†]The University of Tennessee at Chattanooga)
28. Jordan, W., Elmore, B., *An Engineering Student Perspective on Ethics*, Proceedings of the 5th Christian Engineering Education Conference, Salt Lake City, Utah, June 23-25, 2004, pp. 85-98

29. Jordan, W., Elmore, B., *Balancing Professional and Personal Life to Achieve Significance in an Academic Career*, presented at the New Engineering Educators Division Session, 2003 A. S. E. E. Annual Conference, Nashville, TN, June, 2003
30. Jordan, W., Elmore, B., *Introducing Materials Science and Chemistry to the K-12 Community*, presented at Session 2364, 2003 A. S. E. E. Annual Conference, Nashville, TN, June, 2003
31. Elmore, John B.; Zonghuan, Lu; Elmore, Bill B.; Jones, Francis, “*Immobilized Enzyme Studies in a Micro-scale Bioreactor*”, presented at the 25th Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO, May 4-7, 2003
32. Jordan, W., Elmore, B., and Napper, S., *Using Moral Theories to Help Engineers Make Ethical Decisions*, presented at the 2003 Gulf Southwest ASEE regional meeting, Arlington, TX, March, 2003
33. Jordan, W., Elmore, B., Madden, D.; workshop for *Dissemination of Our Model; A Course in Engineering Science Problem Solving for Future Teachers*; presented at Louisiana Tech, June 6-7, 2002
34. Jordan, W., Elmore, B., and Napper, S.; *Using Moral Theories to Evaluate Engineering Codes of Conduct*, presented at the A.S.E.E. Annual Meeting in Montreal, Quebec, Canada, June 2002
35. Elmore, B. B. , Zonghuan Lu, Rui Jiang, and Francis Jones; *A Novel Micro-Scale Enzyme Reactor for Environmental Applications*, presented at 24th Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 2002
36. Bailey, R., Prakash Damshala, B. B. Elmore, and Francis Jones; *Numerical Simulation of an Immobilized Enzyme Microbioreactor*, presented at 24th Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 2002
37. Zonghuan, L.*; Elmore, B. B.*; Jones, Francis[§], Rui Jiang[§], (*Chemical Engineering Program, Louisiana Tech University, [§]Chemical & Environmental Engineering Department, The University of Tennessee at Chattanooga); “*Micro-scale Biochemical Reactor Studies Using Immobilized Enzymes in Polydimethylsiloxane (PDMS)*”, presented at the 2002 Louisiana EPSCoR Conference, Baton Rouge, LA, April 10-11, 2002
38. Jiang, R., F. Jones (University of Tennessee, Chattanooga), B. B. Elmore (Louisiana Tech University); *The Use of MEMS Technology in the Development of Novel Bioreactors for the Degradation of Pollutants in Wastewater*, presented at the Graduate Student Research poster presentation, University of Tennessee, Chattanooga, April 12, 2002
39. Jordan, W., and Elmore, B.; *Developing an Outreach Program to Introduce Engineering to Non-Engineers*, paper presented at the Gulf Southwest Regional Meeting of A.S.E.E., March 2002. In CD based *Proceedings* (no page numbers)
40. Jordan, W., and Elmore, B.; *Report on our Problem Solving in Engineering Science Course*, paper presented at NASA Opportunities for Visionary Academics (NOVA) Leadership Development Conference (LDC), Greenbelt, MD, March 2002
41. Jordan, W., Elmore, B., and Silver, D.; *Using Space Topics to Teach Engineering Concepts to Elementary and Middle-school Students*, paper presented at the Louisiana Science Teachers Association (L.S.T.A.) Annual Convention, Baton Rouge, LA, December 2001
42. B. B. Elmore*, F. Jones #, Z. Lu*, A. Forrest*, and R. Jiang#, (* Louisiana Tech University, # Univ. of Tennessee—Chattanooga); *Heterogeneous catalysis in a microscale reactor fabricated from a biologically active polymer*, presented at the 2001 SPIE symposium on *Micromachining and Microfabrication*, San Francisco, CA, October 21-24, 2001

43. Disawal, S., J. Qiu, B.Chen, S. Patton, B. B. Elmore, Y. Lvov, *Nano-Fabrication by Electrostatic Layer-by-Layer (LbL) Self-Assembly*, presented at the Second Louisiana Conference on Microfabrication and Material Science, Baton Rouge, LA, August 20-22, 2001
44. Jordan, W., D. Silver, and B. B. Elmore; *Using Laboratories to Teach Engineering Skills to Future Teachers*, presented at the Summer ASEE national meeting, Albuquerque, NM, June 2001, CD-based proceedings (no page numbers)
45. Elmore*, B. B., Jim Palmer*, Francis Jones[†], Zonghuan Lu*, and Rui Jiang[†]; *Development of a micro-scale biochemical reactor fabricated from a biologically active polymer*, (*Louisiana Tech University, [†]Univ. Tennessee—Chattanooga); presented at TEXMEMS III, Dallas, TX, June 7, 2001
46. Elmore, B. B., Zonghuan Lu, and Francis Jones; *The development of a novel micro-scale system as an immobilized enzyme bioreactor*, presented at the 23rd Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO, May 6-9, 2001
47. Jordan, W., B. B. Elmore, D. Silver; *Report on the Creation of a Problem Solving in Engineering Science Course for Future Teachers*, presented at NASA Opportunities for Visionary Academics (NOVA) Leadership Development Conference (LDC), Arlington, VA, January 2001
48. Dickey, C. K., B. B. Elmore and Francis Jones; *Enzyme catalyzed biochemical production in a polydimethylsiloxane (PDMS) microreactor*, presented at the International Society for Optical Engineering (SPIE) *Micromachining and Microfabrication 2000* symposium, San Jose, CA, September 18-20, 2000
49. F. Jones, R. Besser, B. B. Elmore, J. Fang, T. Cui, *Experimental system for the study of gas-solid heterogeneous catalysis in microreactors*, presented at the International Society for Optical Engineering (SPIE) *Micromachining and Microfabrication 2000* symposium, San Jose, CA, September 18-20, 2000
50. Jordan, W., B. B. Elmore, D. Silver, *Creating a Course in Engineering Problem Solving for Future Teachers*, Louisiana Tech University, presented at the American Society for Engineering Education (ASEE) national meeting, St. Louis, June 2000, CD-based proceedings (no page numbers)
51. Jordan, W., B. B. Elmore, D. Silver, *Update on NOVA Grant at Louisiana Tech University*, presented at NOVA Phase III Workshop, Marshall Space Flight Center, Huntsville, AL, June 2000
52. Dickey, C. F., B. B. Elmore and Frank Jones, *Production of Pharmaceuticals by Immobilized Enzymes in a Microreactor*, 2000 Spring National Meeting of The American Institute of Chemical Engineers (IMRET 4 Topical Conference), Atlanta, GA, March 2000
53. Jordan, W., B. B. Elmore, D. Silver, *Problem Solving in Engineering Science for Teachers*, presented at the NASA Opportunities for Visionary Academics (NOVA) Conference, Orlando, FL, Januray 2000
54. Elmore, B. B., P. I. Trivedi, G. Sathanandam, and F. Jones, *Microbial Conversion of Synthesis Gas Components to Useful Fuels and Chemicals*, presented at the Nineteenth Symposium on Biotechnology for Fuels and Chemicals, Colorado Springs, CO, May 4-8, 1997
55. Fegley, E. P., D. D. Charles, B. B. Elmore, M. M. McCurdy, *Natural remediation of spilled oil in an upland North Louisiana location*, presented at the Louisiana Academy of Sciences annual meeting; Nicholls State Univ., Thibodeaux, LA, Feb. 1-2, 1996
56. Elmore, B. B., G. R. Madhukar, and H. K. Huckabay, *Microbial Conversion of Synthesis Gas Components to Useful Fuels and Chemicals*, presented at the Seventeenth Symposium on Biotechnology for Fuels and Chemicals, Vail, CO, May 7-11, 1995

57. Elmore, B. B., Brad Todd, Jennifer Austin, and H. K. Huckabay, *Cellulase Activity of Trichoderma reesei (RUT-C30) on Municipal Solid Waste*, presented at the Seventeenth Symposium on Biotechnology for Fuels and Chemicals, Vail, CO, May 7-11, 1995
58. Elmore, B. B., Hui Zhan, and H. K. Huckabay, *Microbial Liquefaction of Lignite Pretreated with Dilute Acid at Elevated Temperature and Pressure*, presented at the Sixteenth Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 9-13, 1994
59. Elmore, B. B., Sanjoy Silva, Houston K. Huckabay, *Cellulase Activity of Trichoderma reesei (RUT-C30) on Municipal Solid Waste*, presented at the Sixteenth Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 9, 1994
60. Elmore, B. B., Houston K. Huckabay, Audie Maxey, Amit Rao, *Microbial Liquefaction of Louisiana Lignite*, presented at the Fifteenth Symposium on Biotechnology for Fuels and Chemicals, Colorado Springs, CO, May 10-14, 1993
61. Elmore, B. B., H. K. Huckabay, X. Chen, A. Maxey, *Cellulase Activity of Trichoderma reesei (RUT-C30) on Municipal Solid Waste*, presented at the Fifteenth Symposium on Biotechnology for Fuels and Chemicals, Colorado Springs, CO, May 10-14, 1993
62. Elmore, B. B., M. W. Hsieh; *Coal Handling, Processing and Analysis Techniques as Applied to Microbial Coal Desulfurization*, workshop presentation at the Sixth Annual Coal Preparation, Utilization, and Environmental Control Contractors Conference, Pittsburgh, PA, August, 1990
63. Lundback, K. M. O., B. B. Elmore, S. B. Baker, K. T. Klasson, E. C. Clausen, J. L. Gaddy, *Parameters Affecting the Kinetics of Ethanol Production from CO, CO₂, and H₂ by **Clostridium ljungdahlii***, presented at the Twelfth Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 1990
64. Klasson, K. T., B. B. Elmore, J. L. Vega, M. D. Ackerson, E. C. Clausen and J. L. Gaddy, *Biological Production of Liquid and Gaseous Fuels from Synthesis Gas*, presented at the Eleventh Symposium on Biotechnology for Fuels and Chemicals, Colorado Springs, CO, May 1989
65. Vega, J. L., B. B. Elmore, M. D. Ackerson, E. C. Clausen, and J. L. Gaddy, *Biological Production of Liquid Fuels from Coal*, presented at the Symposium on Biological Processing of Coal and Coal-Derived Substances, Palo Alto, CA, May 1989
66. Vega, J. L., B. B. Elmore, J. W. Green, K. T. Klasson, E. C. Clausen, and J. L. Gaddy, *Manipulation of Clostridium ljungdahlii to Produce Higher Yields of Ethanol from CO, CO₂, and H₂*, presented at the American Society for Microbiology Conference on Biotechnology, Orlando, FL, June 1989
67. Elmore, B. B., J. L. Vega, M. D. Ackerson, E. C. Clausen, and J. L. Gaddy, *Bioconversion of Synthesis Gas into Ethanol or Methane*, Proceedings of the IGT Symposium on Gas, Oil, and Coal Biotechnology, 1989
68. Vega, J. L., S. Prieto, B. B. Elmore, E. C. Clausen, and J. L. Gaddy, *Biological Production of Ethanol from Synthesis Gas*, presented at the Tenth Symposium on Biotechnology for Fuels and Chemicals, Gatlinburg, TN, May 1988

Professional Development

25th Annual NACADA Summer Institute, New Orleans, LA July 31-August 5, 2011.

NSF-STEP proposal preparation workshop, Louisville, KY, June 23-25, 2010

NSF-STEP program workshop at Louisiana Tech University, Ruston, LA, July 13-16, 2009
(Workshop focused on Louisiana Tech's NSF grand "Living with the Lab" in which engineering freshmen participate in a design oriented course sequence using robotics, rapid prototyping and bench-scale milling apparatus)

National Academic Advising Association (NACADA) Region IV conference, MSU campus, March 14-17, 2009

Accrediting Board for Engineering and Technology (ABET) "Best Practices" workshop; Atlanta, GA, February 6-8, 2009

NSF visit, Arlington VA; visited with program officers regarding funding opportunities; April 22-23, 2007

Effective Teaching: A Workshop; led Rich Felder, Ph.D. and Rebecca Brent—specialists and noted authors and speakers in Effective Teaching strategies; Swalm auditorium, MSU campus, January 4-5, 2007

Rigorous Research in Engineering Education—NSF funded workshop ; presented, in part, by grantees from the Colorado School of Mines, Golden, CO, July 16-21, 2006

NSF visit, Arlington VA, visited with various program officers about funding opportunities, April 30-May 1, 2006

Service

Professional

Nominated for the national AIChE *Career and Education Operation Council (CEOC)*, Spring 2011

Mentoring advisor to AIChE "Sister Chapter" program—collaborating with Universidad Nacional Autonoma de Honduras seeking to form a new AIChE student chapter, begun July 2010

Chosen to serve on AIChE International Student Chapters Subcommittee—May 2010 to present

National AIChE New Student Chapter (domestic) subcommittee—Spring 2009 to present

Session Chair, ASEE/IEEE Frontiers in Education Conference, San Antonio, TX, October 18-21, 2009

NSF-ISE (i.e. Informal Science Education) proposal panel reviewer; Arlington, VA, August 5-6, 2008

Mississippi Science Teachers Association—presented a workshop on using LEGO NXT[®] in the classroom for project-based learning; Jackson, MS, October 21-22, 2007

University of Tennessee, Chattanooga—Provided consultation visit for chemical engineering program preparing for ABET visit, April 3-5, 2007

Invited judge for the following:

- **Southern Regional Student Poster Competition**—AIChE Regional Student Conf.; N.C. State; Raleigh, NC; April '10
- **National Student Poster Competition**—AIChE National Student Conference, Nashville, TN, Nov. '09
- **Southern Regional Student Poster Competition**—AIChE Regional Student Conf.; U. Alabama; Tuscaloosa, AL; March '09
- **National Student Poster Competition**—AIChE National Student Conference, Philadelphia, PA; Nov. '08
- **Southern Regional AIChE Car Competition**—AIChE Regional Student Conference, Auburn, AL; March 2008.
- **National Student Paper and Poster Competitions**—AIChE National Student Conference, Salt Lake City, UT; November, 2007
- **Southern Regional Conference Poster Competition**—AIChE Regional Conference, Univ. South Carolina, SC; March, 2007
- **National Poster Competition**—AIChE National Student Conference, San Francisco, CA; November, 2006

Invited keynote speaker—*Women in Science and Technology Conference, East Mississippi Community College, Golden Triangle Campus, February 2007.*

Team coach—**“BEST Robotics” Christian Homeschool Educators team**, competition sponsored by Bagley College of Engineering, Mississippi State University, October 2005.

Team coach—**National Engineers Week Future City Competition**, Oct./Nov 2003

Team coach—**First Lego League “No Limits” (Disabilities awareness project)**, Louisiana Tech sponsored robotics design team—received second place Design Innovation award, ages 9-14, competition November, 2004

Team coach—**First Lego League Mission to Mars Challenge**, Louisiana Tech sponsored robotics design team, ages 9-14, received Design Innovation award at first state competition to be held in Louisiana, November 15, 2003

ABET Chemical Engineering Program Reviewer—Chemical Engineering Program Evaluation visits:

- Cross-training for ABET-TAC; Industrial Chemical Process Technology program; University of Puerto Rico, Aricebo

- University of Kentucky—Paducah, November 2010
- Trine University, Angola, IN, October 2008
- Polytechnic University of Puerto Rico, San Juan, September 2007
- Cooper Union, Manhattan, NYC, NY, November 2006
- Hampton University, November, 2005
- Auburn University, November, 2004
- Observer training, University of Alabama-Huntsville ABET visit, October 12-14, 2003.

Peer reviewer for the following journals:

AIChE J.; J. Amer. Chem. Soc.; Biocatalysis and Biotransformations; Applied Biochemistry and Biotechnology; Chemical Engineering Communications; J. Chemical Engineering Education; and, proposals submitted to the ***National Science Foundation***, '98 & '08

ABET EC2000 criteria assessment report—coordination of assessment activities and report development for fall 2001 visit—2000 to 2001 (ongoing assessment program). Active with program assessment for Dave C. Swalm School of Chemical Engineering, Mississippi State University.

AIChE—El Dorado Section, '98-'99, Louisiana Tech coordinator/liaison for Engineering Week and student activities

University & Community Service

Mississippi State

University Community Engagement Committee—co-Chair for the Undergraduate Research sub-committee—began fall 2010 (standing committee)

Summer Bridge Mentor, July 21-August 4, 2010

Directed 25 minority students entering MSU in the fall 2010 semester in robotics activities. Also held multiple informal meetings to discuss academic and career planning. AIChE hosted a “celebration picnic” for all 50 Bridge participants and the counseling staff.

Summer Bridge Mentor, July 20-31, 2009

Directed ~10 minority students entering MSU in the fall 2009 semester in robotics activities, including informal discussions on academic and career planning. AIChE hosted a closing picnic for all Summer Bridge participants and the counseling staff.

Quest Camp, summers of 2008, 2009, 2010, 2011

Directed one or two students in chemical engineering related research for several weeks each summer. These students are rising seniors and high academic achievers. At least three of these students have joined chemical engineering and two have already proven to be among the highest academic achievers in our department.

AICHE Advisor, August 2005 to present

Activities include

- Coordinating, planning and setup with AICHE officers **all** meetings, tailgates and special events
- AICHE tailgates for all home football games
- Fall “GumboFest” (held in conjunction with AICHE golf tournament and homecoming)
- “Spring Release”—annual crawfish boil held in conjunction with spring AICHE golf tournament and SuperBulldawg weekend
- *AICHE Chem-E car, Team coach*
- *AICHE cookout team, facilitator*
- *Coordinating AICHE service events including Habitat for Humanity, Salvation Army, Girl Scouts & Boy Scouts and Palmer Children’s Home*

Chair, Bagley College of Engineering Promotion and Tenure Committee, 2008, 2009

BEST Robotics, homeschool team coach (inaugural year of competition in Mississippi—competition held on Mississippi State campus)

Boy Scouts, Spring 2006 to present, assisting with Troop 27 activities in Starkville, MS (Assistant Scoutmaster)

Louisiana Tech

COES Dean’s Search Committee, College of Engineering and Science, March-May, 2004

Chemical Engineering Advisory Board—Organize annual fall/spring advisory board meetings; recruiting new board members; facilitating communications with board

Louisiana Tech Road Show—high school recruiting trips to regional community centers, April 2003 & 2004

College of Education reaccreditation review (NCATE)—poster presentation for Engr 289C (NASA sponsored engineering problem-solving course for pre-service teachers), Feb., 2004

ABET Assessment Team—working on a team with the Associate Dean for Undergraduate Studies and Program Chairs to refine and implement assessment tools for standardization within the College of Engineering & Science, '98 to '05

Student Advising—advising approximately 25-50 students each quarter; reviewing all graduating senior records

“Time Out for Tech” and visits with football recruits—TOFT three Saturday’s yearly in student recruiting; football recruits periodic as needed ('90 to present)

Strategic Plan Development Team, Team Leader, '97-'98 academic year

Faculty Advisor

- **IMPACT**—African-American ministry (associated with Campus Crusade for Christ) ('03-'04)
- **Omega Chi Epsilon** (*Chemical Engineering honor society*, '97 to present)
- **American Institute of Chemical Engineers** ('90-'96, '98-'00, '02 to present)
- **The Fellowship** (*an interdenominational campus Christian org.*, '96-'00)
- **ATO Fraternity Board of Trustees**, '95-'96; **Faculty Advisor**, '96 to fall 2000

Regional Science Fair Judge—(several years of service)

Community

Broadmoor Baptist Church, Starkville, MS—children’s ministry, congregational teaching and music

Calvary Baptist Church, Starkville, MS—youth music, teaching collegiates, pastoral search committee

Crossroads church—Elder, directing youth activities and playing with worship band (2003 to summer 2005)

Boy Scouts of America—Assistant Scoutmaster—Troop 27 (Starkville) and 45 (Ruston, LA) (spring '97 to 2008); den assistant with Pack 59, Den 7 (Ruston, LA)

The Navigators (Associate staff, campus ministry division, '94 to '97)