

RANDY S. LEWIS
J.J. Christensen Professor
May 2006

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EDUCATION

Ph.D., Chemical Engineering
Massachusetts Institute of Technology, Cambridge, MA, February 1995.
“Nitric Oxide Kinetics in Biological Systems”
B.S., Chemical Engineering
Brigham Young University, Provo, UT, April 1989.

PROFESSIONAL EXPERIENCE

Professor, Chemical Engineering Department
Brigham Young University, Provo, UT, August 2005-present
R.N. Maddox Professor, School of Chemical Engineering,
Oklahoma State University, Stillwater, OK, July 2004-July 2005
R.N. Maddox Associate Professor, School of Chemical Engineering,
Oklahoma State University, Stillwater, OK, February 2003-June 2004
Associate Professor, School of Chemical Engineering, Oklahoma State University,
Stillwater, OK, July 1999-February 2003.
Assistant Professor, School of Chemical Engineering, Oklahoma State University,
Stillwater, OK, October 1994-June 1999.
Graduate Instructor, Thermodynamics, Department of Chemical Engineering,
Massachusetts Institute of Technology, Cambridge, MA, Fall 1993.
Graduate Research Assistant, Department of Chemical Engineering, Massachusetts
Institute of Technology, Cambridge, MA, January 1991-November 1994.
Teaching Assistant, Transport Processes, Fall 1990.
Research Assistant, Wiltec Research Company, Provo, UT, September 1989-January 1990.
Co-Op Engineer, Dow Chemical, Walnut Creek, CA, May 1989-September 1989.
Intern, SRI International, Menlo Park, CA, April 1987-December 1987.

RESEARCH INTERESTS

Bioreactor design
Analysis of nitric oxide effects on biological systems
Biomaterials
Biomass conversion to fuels

PROFESSIONAL AND HONORARY ORGANIZATIONS

American Institute of Chemical Engineers (AIChE)
American Society of Engineering Education (ASEE)
Phi Kappa Phi, Tau Beta Pi
Omega Chi Epsilon

HONORS AND AWARDS

Engineering Foundation Fellowship, New York, 1998
Teacher of the Year, School of Chemical Engineering, Oklahoma State University, 1998
Halliburton Outstanding Young Faculty Award, College of Engineering, Architecture, and Technology, Oklahoma State University, 1999
American Institute of Chemical Engineers (AIChE) National Advisor of the Year, 2000
Outstanding Advisor, College of Engineering, Architecture, and Technology, Oklahoma State University, 2000
Halliburton Outstanding Faculty Award, College of Engineering, Architecture, and Technology, Oklahoma State University, 2003

PATENTS

1. Fermentation of Biomass to Fuel Ethanol, submitted 2006

PUBLICATIONS

Peer Reviewed Publications:

1. Tamir, S., Lewis, R. S., deRojas Walker, T., Deen, W. M., Wishnok, J. S., and Tannenbaum, S. R., "The influence of delivery rate on the chemistry and biological effects of nitric oxide," *Chemical Research in Toxicology*, **6**:895-899, 1993.
2. Lewis, R.S., Deen, W. M., Tannenbaum, S. R., and Wishnok, J. S., "Membrane mass spectrometer inlet for quantitation of nitric oxide," *Biological Mass Spectrometry*, **22**:45-52, 1993.
3. Lewis, R.S. and Deen, W. M., "Kinetics of the reaction of nitric oxide with oxygen in aqueous solutions," *Chemical Research in Toxicology*, **7**:568-574, 1994.
4. Lewis, R. S., Tannenbaum, S. R., and Deen, W. M., "Kinetics of N-nitrosation in oxygenated nitric oxide solutions at physiological pH: role of nitrous anhydride and effects of phosphate and chloride," *Journal of American Chemical Society*, **117**:3933-3939, 1995.
5. Lewis, R. S., Tamir, S., Tannenbaum, S. R., and Deen, W. M., "Kinetic analysis of the fate of nitric oxide synthesized by macrophages in vitro," *Journal of Biological Chemistry*, **270**:29350-29355, 1995.
6. Lewis, R. S. and Deen, W. M. "Stirred reactor with continuous nitric oxide sampling for use in kinetic studies," *Methods in Enzymology*, **268**: 247-259, 1996.
7. Ramamurthi, A. and Lewis, R.S. "Measurement and modeling of nitric oxide release rates for nitric oxide donors," *Chemical Research in Toxicology*, **10**: 408-413, 1997.
8. Ramamurthi, A. and Lewis, R.S. "Design of a novel apparatus to study nitric oxide (NO) inhibition of platelet adhesion", *Annals of Biomedical Engineering*, **26**: 1036-1043, 1998.
9. Kavdia, M., Nagarajan, S., and Lewis, R.S. "Novel devices for the predicatable delivery of nitric oxide to aqueous solutions," *Chemical Research in Toxicology*, **11**: 1346-1351, 1998.
10. Kavdia, M., Stanfield, J., and Lewis, R.S. "Nitric oxide, superoxide, and peroxynitrite effects on the insulin secretion and viability of β TTC3 cells," *Annals of Biomedical Engineering*, **28(1)**:102-109, 2000.
11. Ramamurthi, A., and Lewis, R. S. "Influence of agonist, shear rate, and perfusion time on nitric oxide inhibition of platelet deposition", *Annals of Biomedical Engineering*, **28**:1-8, 2000.
12. Ramamurthi, A., Robson, S.C., and Lewis, R.S. "Effects of nitric oxide (NO) and soluble nucleoside triphosphate diphosphohydrolase (NTPDase) on inhibition of platelet deposition *in vitro*", *Thrombosis Research*, **102**:331-341, 2001.
13. Duan, X. and Lewis, R.S. "Improved haemocompatibility of cysteine-modified polymers via endogenous nitric oxide", *Biomaterials*, **23**:1197-1203, 2002.

14. Kavdia, M. and Lewis, R.S. "Free radical profiles in an encapsulated pancreatic cell matrix", *Annals of Biomedical Engineering*, **30**: 721-730, 2002.
15. Rajagopalan, S., Datar R.P., and Lewis, R.S. "Formation of ethanol from carbon monoxide via a new microbial catalyst", *Biomass and Bioenergy*, **23**: 487-493, 2002.
16. Kavdia, M. and Lewis R.S. "Nitric oxide delivery in stagnant systems via nitric oxide donors: A mathematical model", *Chemical Research in Toxicology*, **16**: 7-14, 2003.
17. Lawrence, B.J., Beene, J.D., Madihally, S.V., and Lewis, R.S. "Incorporation of non-ideal reactors in a junior-level course using computational fluid dynamics (CFD)", *J. Chemical Engineering Education*, **38**: 136-141, 2004.
18. Datar, R.P., Shenkman, R.M., Cateni, B.G., Huhnke, R.L., and Lewis, R.S., "Fermentation of Biomass-Generated Producer Gas to Ethanol", *Biotechnology and Bioengineering*, **86**: 587-594, 2004.
19. Gappa-Fahlenkamp, H., Duan, X., and Lewis, R.S. "Analysis of Immobilized L-Cysteine on Polymers", *J. Biomedical Materials Research Part A*, **71A**: 519-527, 2004.
20. Gappa-Fahlenkamp, H., and Lewis, R.S. "Improved Haemocompatibility of Polyethylene Terephthalate Modified with Various Thiol-Containing Groups", *Biomaterials*, **26**: 3479-3485, 2005.
21. Lewis, R.S., Datar, R.P. and Huhnke, R.L. "Biomass to Ethanol", in *Encyclopedia of Chemical Processing*, Sunggyu Lee Ed., Marcel Dekker: New York, NY, 2005 (in press)
22. Lewis, R.S., Moshfeghian, A., and Madihally, S.V. "Engineering Analysis in the Chem-E-Car Competition", *J. Chemical Engineering Education*, **xx**: 66-72, 2006.
23. Ahmed, A. and Lewis, R.S. "Effects of Biomass-Generated Syngas Constituents on Cell Growth, Product Distribution and Hydrogenase Activity of *Clostridium carboxidivorans* P7^T", *Biomass and Bioenergy* (in press)
24. Lalman, J. and Lewis, R.S. "Experiences Gained from Developing a Multi-Disciplinary Biobased Graduate Course at Oklahoma State University", *J. Chemical Engineering Education*, (in review)
25. Ahmed, A. and Lewis, R.S. "Fermentation of Biomass-generated Synthesis Gas: Effects of Nitric Oxide", *Biotechnology and Bioengineering* (in review)
26. Madihally, S.V. and Lewis, R.S. "Implementation and analysis of hemodialysis in Unit Operations", *J. Chemical Engineering Education*, 2006 (in review).

Other Publications:

27. Lewis, R. S., Deen, W. M., Tannenbaum, S. R., and Wishnok, J. S. "Membrane probe for quantitation of nitric oxide in liquid systems," *Proceedings of the 40th ASMS Conference on Mass Spectrometry and Allied Topics*, Washington, D.C., pp. 1109-1110, 1992.
28. Lewis, R.S. "Nitric oxide: a biological molecule," 5th World Congress of Chemical Engineering, San Diego, CA., 1996.
29. Lewis, R.S. and Ramamurthi, A. "Nitric oxide inhibition of platelet deposition on biomaterials," *Proceedings of the 36th Annual Rocky Mountain Bioengineering Symposium*, Copper Mountain, CO, April 1999.
30. Duan, X. and Lewis, R.S. "Determination of free and immobilized L-cysteine", *Proceedings of the Annual AIChE Meeting*, Los Angeles, CA, 2000.
31. Duan, X. and Lewis, R.S. "Exploiting endogenous nitric oxide to improve the haemocompatibility of polyethylene terephthalate an polyurethane", *Proceedings of the Annual AIChE Meeting*, Los Angeles, CA, 2000.
32. Rajagopalan, S. and Lewis, R.S. "Synthesis gas conversion to ethanol", *Proceedings of the Annual AIChE Meeting*, Los Angeles, CA, 2000.
33. Gappa, H., Duan, X., Lewis, R.S. "A novel design to increase the haemocompatibility of biomaterials". *Annals of Biomedical Engineering*, **29**(S1), S1., Durham, NC, 2001.
34. Lewis, R.S. "The value of a hands-on experience in a reactor design course", *Proceedings of the ASEE Annual Meeting*, Montreal, CANADA 2002.

35. Lewis, R.S., Datar, R.P., Tanner, R.S., Cateni, B.G., Bowser, T.J., Bellmer, D.D., and Huhnke, R.L. "Making the connection: Conversion of biomass-generated producer gas to ethanol", *Proceedings of Bioenergy 2002*, Boise, ID, 2002.
36. Gappa-Fahlenkamp, H., Duan, X., Lewis, R.S. "Characterization and optimization of a novel design to increase the haemocompatibility of biomaterials", *Second Joint EMBS-BMES Conference 2002: Final Program and Book of Abstracts*, 179, San Antonio, TX, 2002.
37. Datar, R., Shenkman, R., Cateni, B.G., Huhnke, R.L., and Lewis, R.S. "Ethanol from Biomass-generated producer gas". *Proceedings of the Annual AIChE Meeting*, San Francisco, CA, 2003.
38. Bowser, T.J., Huhnke, R.L., Epplin, F.M., Bellmer, D.D., Lewis, R.S., and Taliaferro, C.M. "Conversion of agricultural biomass to ethanol using a gasification-fermentation process". *Proceedings of the Agriculture as a Producer and Consumer of Energy Conference*, Arlington, VA, 2004.
39. Lewis, R.S., Datar, R.P., Ahmed, A., Cateni, B.G., Huhnke, R.L., Bellmer, D.D., Bowser, T.J., and Tanner, R.S. "Generation of producer gas from biomass followed by conversion to ethanol and other products". *Proceedings of the 2nd World Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection*, Rome, Italy, 2004.

PRESENTATIONS

Invited Presentations:

1. "Nitric oxide: oxidation and nitrosation in aqueous solution," Department of Chemical Engineering, University of Maryland-Baltimore County, Baltimore, MD, May 1994.
2. "Nitric oxide: oxidation and nitrosation in aqueous solution," Department of Chemical Engineering, Louisiana State University, Baton Rouge, LA, April 1994.
3. "Nitric oxide: a biological messenger or cytotoxic agent?," Department of Chemical Engineering, Brigham Young University, Provo, UT, March 1996.
4. "Analysis of NO-releasing compounds," Department of Chemical Engineering, University of Oklahoma, Norman, OK, October 1996.
5. "Analysis of NO-releasing compounds," Department of Chemical Engineering, University of Kansas, Lawrence, KS, November 1996.
6. "Nitric oxide inhibition of platelet deposition on biomaterials," Harvard Medical School, Boston, MS, July 1999.
7. "Nitric oxide inhibition of platelet deposition on biomaterials," National Cancer Institute, Frederick, MD, September 1999.
8. "Nitric oxide inhibition of platelet deposition on biomaterials," Johns Hopkins University, Baltimore, MD, November 1999.
9. "Exploiting endogenous nitric oxide to improve the haemocompatibility of polymers," Oklahoma State University College of Osteopathic Medicine, Stillwater, OK, October 2000.
10. "Exploiting nitric oxide to improve the biocompatibility of polymers," AIChE Bartlesville Section, Bartlesville, OK, March 2001.
11. "The three R's for a successful AIChE Chapter", Annual AIChE Meeting, Reno, NV, November 2001.
12. "Life after graduate school: Why am I here and where am I going?", MIT Division of Bioengineering, Cambridge, MA, January 2003.
13. "Biomass Conversion to Ethanol", Student's Chemical Engineering Congress, Monterrey, Mexico, November 2003.
14. "Biomass to Ethanol: A holistic approach", Brigham Young University, Provo, UT, February 2005.
15. "Biological Utilization of CO, H₂, and CO₂", Advanced Coal Workshop, Stanford University Global Climate and Energy Project, Provo, UT, March 2005.
16. "Biomass to Ethanol: A holistic approach", UC Davis, Davis, CA, October 2005.

17. "Biomass to Ethanol: A holistic approach", University of Nevada-Reno, Reno, NV, October 2005.

Other Presentations (with conference Abstracts):

18. "Membrane probe for quantitation of nitric oxide in liquid systems," with W.M. Deen, S.R. Tannenbaum, and J. Wishnok, *40th ASMS Conference on Mass Spectrometry and Allied Topics*, Washington, DC, May 1992.
19. "Nitric oxide kinetics in physiological solutions," with W.M. Deen, *AICHE National Meeting*, St. Louis, MO, November 1993.
20. "Evidence that nitrous anhydride is an intermediate in the oxidative conversion of nitric oxide to nitrite in aqueous solutions: effects of phosphate on rates of N-nitrosation," with W. M. Deen and S.R. Tannenbaum, *1st International Conference on Biochemistry and Molecular Biology of Nitric Oxide*, Los Angeles, CA, July 1994.
21. "Characterization of nitric oxide-releasing compounds," with A. Ramamurthi, *AICHE National Meeting*, Miami Beach, FL, November 1995.
22. "Nitric oxide: a biological molecule," *5th World Congress of Chemical Engineering*, San Diego, CA., July 1996.
23. "Nitric oxide delivery to pancreatic cells", with S. Nagarajan, *AICHE National Meeting*, Chicago, IL, November 1996.
24. "Measurement of nitric oxide release rates for nitric oxide donors", with A. Ramamurthi, *IBC's 6th Annual Conference on Nitric Oxide*, Philadelphia, PA, May 1997.
25. "Nitric oxide delivery to cell cultures", with S. Nagarajan, *Biochemical Engineering X*, Kananaskis Village, Alberta, Canada, May 1997.
26. "Nitric oxide: Reactions, delivery methods, and measurements," *53rd American Chemical Society Southwest Regional Meeting*, Tulsa, OK, October 1997.
27. "Platelet Adhesion", with A. Ramamurthi, *Artificial Organs II*, Engineering Foundation, Canmore, Alberta, Canada, July 1998.
28. "Nitric oxide inhibition of platelet adhesion", with A. Ramamurthi, *AICHE National Meeting*, Miami Beach, FL, November 1998.
29. "Effects of nitric oxide, superoxide, and peroxynitrite on insulin secretion," with M. Kavdia, *AICHE National Meeting*, Miami Beach, FL, November 1998.
30. "Nitric oxide inhibition of platelet deposition on biomaterials," with A. Ramamurthi, *Rocky Mountain Bioengineering Symposium*, Copper Mountain, CO, April 1999.
31. "Alcohol production via synthesis gas," with A.J. Johannes and S. Rajagopalan, *AICHE Local Section Meeting*, Stillwater, OK, September 2000.
32. "Determination of free and immobilized L-cysteine", with X. Duan, *AICHE National Meeting*, Los Angeles, CA, November 2000.
33. "Exploiting endogenous nitric oxide to improve the haemocompatibility of polyethylene terephthalate an polyurethane", with X. Duan, *AICHE National Meeting*, Los Angeles, CA, November 2000.
34. "Synthesis gas conversion to ethanol", with S. Rajagopalan, *AICHE National Meeting*, Los Angeles, CA, November 2000.
35. "Gasification/Bioconversion Process to Convert Biomass into Ethanol – A Holistic Approach", *23rd Annual Biotechnology Symposium*, Breckenridge, CO, May 2001.
36. "A novel design to increase the haemocompatibility of biomaterials" with H. Gappa, *BMES Annual Conference*, Durham, NC, September 2001.
37. "The value of a hands-on experience in a reactor design course", *ASEE Annual Meeting*, Montreal, CANADA June 2002.
38. "Characterization and optimization of a novel design to increase the haemocompatibility of biomaterials" with H. Gappa-Fahlenkamp and X. Duan. *Second Joint EMBS-BMES Conference*, San Antonio, TX, September 2002.
39. "Biobased Products Graduate Program" with J. Lalman, D. Bellmer, and R. Huhnke, *Agricultural Products Utilization Conference*, Kansas City, MO, November 2002.

40. "GRASSohol: Converting grasses and residues into ethanol and other products" with R.L. Huhnke, B.G. Cateni, T.J. Bowser, D.D. Bellmer, and R.P. Datar. *Agricultural Products Utilization Conference*, Kansas City, MO, November 2002.
41. "Enzymatic analysis of biomass-derived producer gas fermentation" with R.M. Shenkman. *25th Annual Biotechnology Symposium*, Breckenridge, CO, May 2003.
42. "Anaerobic fermentation of biomass generated producer gas to ethanol and other useful products" with R.P. Datar, R. M. Shenkman, R. S. Tanner, J. Liou, D.D. Bellmer, R. L. Huhnke, T. J. Bowser, and B. G. Cateni. *25th Symposium on Biotechnology for Fuels and Chemicals*, Breckenridge, CO, May 2003.
43. "Incorporating computational fluid dynamics in the chemical reactor design course", *ASEE Annual Meeting*, Nashville, TN, June 2003.
44. "Ethanol from biomass-generated producer gas" with R.L. Huhnke and R.P. Datar. *AIChE National Meeting*, San Francisco, CA, November 2003.
45. "Utilization of computational fluid dynamics in an undergraduate reactor design course" with S. Madihally. *AIChE National Meeting*, San Francisco, CA, November 2003.
46. "Chem-E-Car competition: An instructional tool for multiple chemical engineering courses" with S. Madihally. *AIChE National Meeting*, San Francisco, CA, November 2003.
47. "Converting biomass into ethanol using a gasification-fermentation process" with R.L. Huhnke, B.G. Cateni, A. Ahmed, and R.S. Tanner. *IBE Conference*, Fayetteville, AK, January 2004.
48. "Biomass to ethanol: A holistic approach using gasification" with R.L. Huhnke, T.J. Bowser, D.D. Bellmer, A. Ahmed, and B.G. Cateni. *ACS National Meeting*, Anaheim, CA, March 2004.
49. "Conversion of agricultural biomass to ethanol using a gasification-fermentation process" with T.J. Bowser, R.L.Huhnke, F.M. Epplin, D.D. Bellmer, and C.M. Taliaferro. *Agriculture as a Producer and Consumer of Energy Conference*, Arlington, VA, June 2004.
50. "Generation of producer gas from biomass followed by conversion to ethanol and other products" with Datar, R.P., Ahmed, A., Cateni, B.G., Huhnke, R.L., Bellmer, D.D., Bowser, T.J., and Tanner, R.S. *2nd World Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection*, Rome, Italy, May 2004.
51. "Evolution of the Chem-E-Car Competition at Oklahoma State University" with S. Madihally, *ASEE Annual Meeting*, Salt Lake City, UT, June 2004.
52. "Fluidized Popcorn Popper" with Mitchell, C. *ASEE Annual Meeting*, Salt Lake City, UT, June 2004.
53. "Ethanol from biomass: Effects of biomass-generated producer gas on bioreactor performance", *Sun Grant Initiative Conference*, Oklahoma City, OK, June 2004.
54. "OSU experience of integrating bio into the Chemical Engineering curriculum", with S. Madihally, *AIChE National Meeting*, Austin, TX, November 2004.
55. "Integrating engineering analysis of Chem-E-Cars into the Chemical Engineering curriculum", with Madihally, S. and Moshfeghian, A. *AIChE National Meeting*, Austin, TX, November 2004.
56. "Ethanol from biomass: Effects of biomass-generated producer gas", with Ahmed, A., *AIChE National Meeting*, Austin, TX, November 2004.
57. "Synthesis gas to fermentation ethanol", with Ahmed, A., Cateni, B.G., Huhnke, R.L., Bellmer, D.D., and Tanner, R.S. *27th Symposium on Biotechnology for Fuels and Chemicals*, Denver, CO, May 2005.
58. "Chem-E-Car Competition: Applying Engineering Analysis" with Madihally, S. *ASEE Annual Meeting*, Portland, OR June 2005.
59. "Implementing bio-related experiments in the unit operations laboratory for students pursuing bio-related options in chemical engineering", with Madihally, S. *ASEE Annual Meeting*, Portland, OR June 2005.
60. "Effects of Biomass-Generated Syngas Constituents on Cell Growth, Product Distribution and Hydrogenase Activity of *Clostridium carboxidivorans* P7^T" with Ahmed, A. *AIChE National Meeting*, Cincinnati, OH, November 2005.

61. "Transnitrosation and Release Kinetics of Nitric Oxide (NO) with Cysteine-modified Biomaterials" with Gu, J. *AIChE National Meeting*, Cincinnati, OH, November 2005.

FUNDED RESEARCH:

Currently Funded Research

- USDA "Biomass-based Energy Research" Co-PI with R.L. Huhnke, F.M. Epplin, A.H. Johannes, T. Bowser, D.D Bellmer, and R.Tanner, \$955,563 for 7-01-04 to 6-30-06.
USDA "Biomass-based Energy Research" Co-PI with R.L. Huhnke, F.M. Epplin, A.H. Johannes, T. Bowser, D.D Bellmer, and R.Tanner, \$947,285 for 7-01-05 to 6-30-07.
Oklahoma Center for the Advancement of Science "Enhanced Biomaterials for Inhibiting Platelet Deposition", Principal Investigator, \$135,000 for 9-1-04 to 8-31-07

Previously Funded Research

- NSF, "Novel Polymers Designed to Minimize Platelet Adhesion" Principal Investigator, \$262,413 for 03-01-01 to 2-28-04
Oklahoma State Homeland Security Initiative. Obtained funding for analytical equipment, bioreactors, and lab infrastructure. \$450,000. 2003.
USDA "Biomass-based Energy Research" Co-PI with R.L. Huhnke, F.M. Epplin, A.H. Johannes, T. Bowser, D.D Bellmore, and R.Tanner, \$897,947 for 7-01-02 to 6-30-04.
USDA "Biomass-based Energy Research" Co-PI with R.L. Huhnke, F.M. Epplin, A.H. Johannes, T. Bowser, D.D Bellmore, and R.Tanner, \$841,833 for 7-01-01 to 6-30-03.
OSU UCER, "Elucidation of Metabolic Pathways of an Acetogenic Organism which is able to Convert Synthesis Gas into Ethanol and other Byproducts" Co-PI with J. Lalman, \$28,169 for 7-1-01 to 12-31-02.
Oklahoma Center for the Advancement of Science and Technology, "Nitric Oxide Effects on Platelet Adhesion", Principal Investigator, \$102,289 for 9-1-96 to 8-31-99.
Environmental Institute of OSU, Center for Energy Research, "Novel Bioreactor for Ethanol Production", Principal Investigator, \$20,000 for 7-1-98 to 6-30-99.
NIH, "Effects of Nitric Oxide and Superoxide on the Function of a Biohybrid Artificial Pancreas", Principal Investigator, \$96,644 for 6-15-96 to 6-14-98.
University Center for Water Research, "Nitrate/Nitrite Analysis in Water via Chemiluminescence", Principal Investigator, \$25,000 for 7-1-96 to 6-30-97.

PROFESSIONAL SERVICE:

BYU Chemical Engineering Service:

Undergraduate Committee	2005 to present
AIChE Student Chapter Co-Advisor	2005 to present

BYU College of Engineering and Technology Service:

Innovation Committee	2005 to present
Building Committee	2005 to present

OSU Chemical Engineering Service:

Undergraduate Advisement Document Committee	1996-1997
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Engineering Fair Coordinator for School	1996-2003
AIChE Advisor	1996-2005
Pre-medica/biomedical option Advisor	1999-2004
Chemical Engineering Scholarship Committee	1998-2004
ABET Accreditation Committee- Chair	2000-2005
Undergraduate Advisor for School of ChE	2002-2005
OSU Pre-med Advisory Committee, ChE Representative	1999-2004

OSU College of Engineering, Architecture, and Technology (CEAT) Service:

ATRC Building Committee	2005
ENGR 1322 Course Restructuring Committee-Chair	1999
Lohmann Medal Selection Committee	1997, 2000, 2001
Hall of Fame Selection Committee	1999
Participated in Interviews for Scholar's Program	1996-2004
ChE Representative to CEAT Strategic Planning Committee	2003

National Professional Service:

American Institute of Chemical Engineers (AIChE)- National	
Career and Education Operating Council member	2000-2005
Career and Education Operating Council, Vice-chair	2002-2003
Career and Education Operating Council, Chair	2003-2004
Student Chapters Committee 2 nd Vice Chair	1996-1997
Student Chapters Committee 1 st Vice Chair	1997-1998
Student Chapters Committee Chair	1998-1999
Host Chapter Advisor for Annual Student Conference	1999
Annual Student Conference Program Chair	1998
Annual Student Conference Fundraising Chair	1997
American Institute of Chemical Engineers (AIChE)- Regional	
Central Oklahoma Section Treasurer	1995-1997
Tri-Sectional Poster Chair	1996
American Society of Engineering Education (ASEE)	
Reviewer, ASEE Annual Meeting	1997
Reviewer and moderator, ASEE Annual Meeting	2003, 2004

PROFESSIONAL DEVELOPMENT:

Conferences, Meetings, and Workshops Attended

1. Essential Teaching Seminars for Engineering Faculty- Staff, San Francisco, CA Oct 2005.
2. American Society of Engineering Education National Meeting, Portland, OR June 2005.
3. 27th Symposium on Biotechnology for Fuels and Chemicals, Denver, CO May 2005
4. ABET Assessment Workshop, Terre Haute, IN April 2005
5. Advanced Coal Workshop, Provo, UT, March 2005.\
6. Leadership Retreat on Center's Development, Washington D.C., January 2005
7. American Institute of Chemical Engineers National Meeting, Austin, TX November 2004.
8. American Society of Engineering Education National Meeting, Salt Lake City, UT June 2004.

9. 2nd World Conference and Technology Exhibition on Biomass for Energy, Industry and Climate Protection, Rome, Italy, May 2004.
10. Essential Teaching Seminars for Engineering Faculty- Staff, Santa Clara, CA May 2005.
11. Curriculum Development Workshops on the Integration of Chemical and Biological Engineering, Tufts University, Medford, MA February 2004
12. American Institute of Chemical Engineers National Meeting, San Francisco, CA November 2003.
13. ABET Faculty Workshop, Minneapolis, MN October 2003
14. Engineering Education Workshop, Bucknell University, Lewisburg, PA July 2003.
15. American Society of Engineering Education National Meeting, Nashville, TN June 2003.
16. American Institute of Chemical Engineers Leadership Conference, NJ June 2003
17. 25th Symposium on Biotechnology for Fuels and Chemicals, Breckenridge, CO May 2003
18. American Institute of Chemical Engineers National Meeting, Indianapolis, IN November 2002.
19. Bioenergy 2002, Boise, ID September 2002
20. Protein Purification Training, Utah State University, Logan, UT September 2002
21. American Society of Engineering Education National Meeting, Montreal, CANADA June 2002
22. Essential Teaching Seminar for Engineering Faculty, Grand Rapids, MI June 2002
23. American Institute of Chemical Engineers Leadership Conference, Chicago, IL May 2002
24. American Institute of Chemical Engineers National Meeting, Reno, NV, November 2001.
25. CFX Training, Pittsburgh, PA, August 2001.
26. Southern Region Extension Conference, Clemson, SC, March 2001.
27. American Institute of Chemical Engineers National Meeting, Los Angeles, CA, November 2000.
28. Bioenergy 2000, Buffalo, NY, October 2000.
29. American Institute of Chemical Engineers National Meeting, Dallas, TX, October 1999.
30. NSF Undergraduate Faculty Enhancement Workshop, Glassboro, NJ, July 1999.
31. American Institute of Chemical Engineers National Meeting, Miami Beach, FL, November 1998.
32. Biotechnology Symposium, Athens, OH, September 1998
33. Artificial Organs II Conference, Canmore, Alberta, Canada, July 1998.
34. American Institute of Chemical Engineers Student Conference, Columbia, MO, March 1998.
35. American Institute of Chemical Engineers Student Conference, Lubbock, TX, February 1998.
36. American Institute of Chemical Engineers National Meeting, Los Angeles, CA, November 1997.
37. American Chemical Society Southwest Regional Meeting, Tulsa, OK, October 1997.
38. Chemical Engineering Summer School, Snowbird, UT, July 1997.
39. Biochemical Engineering X, Kananaskis Village, Alberta, Canada, May 1997.
40. IBC's 6th Annual Conference on Nitric Oxide, Philadelphia, PA, May 1997
41. American Institute of Chemical Engineers Student Conference, Fayetteville, AR, March 1997.
42. American Institute of Chemical Engineers Student Conference, Albuquerque, NM, February 1997.
43. American Institute of Chemical Engineers National Meeting, Chicago, IL, November 1996.
44. 5th World Congress of Chemical Engineering, San Diego, CA., July 1996.
45. American Society of Engineering Education Annual Meeting, Washington D.C., June 1996.
46. Pulmonary Research Group, Schering Plough Research Institute, Kenilworth, NJ, April 1996.
47. American Institute of Chemical Engineers Student Conference, Lincoln, NE, March 1996
48. American Institute of Chemical Engineers National Meeting, Miami Beach, FL, November 1995.
49. Biology of Nitric Oxide, Amelia Island, FL, September 1995
50. 1st International Conference on Biochemistry and Molecular Biology of Nitric Oxide, Los Angeles, CA, July 1994.

51. American Institute of Chemical Engineers National Meeting, St. Louis, MO, November 1993.
52. 40th ASMS Conference on Mass Spectrometry and Allied Topics, Washington, DC, May 1992.