Jason M. Keith
Dean and Earnest and Mary Ann Deavenport, Jr. Chair
James Worth Bagley College of Engineering
Mississippi State University
[redacted]

Administrative Experience

Dean, James Worth Bagley College of Engineering, 2015-present with 2014-2015 as interim

The James Worth Bagley College of Engineering is a nationally ranked College based upon the land-grant tradition of providing an excellent practically-focused undergraduate education with a highly competitive graduate and research program. The college participates fully in the university's position as a research university with very high research activity and with a strong community engagement component. Major accomplishments include:

- Providing leadership to 8 academic departments and several college-level and university-level research centers with over 100 tenure track faculty, 30 instructional faculty, and over 160 research faculty and permanent support staff.
- Growing the college enrollment from 3522 students in fall 2013 to a peak of 4900 in fall 2019 (currently about 4800). This includes ~800 graduate students.
- Fiscal oversight of the annual university budget for the college (academic units ~$18MM, affiliated research units ~$5MM, endowment returns of ~$6MM) with an additional $60-$70MM in externally sponsored research.
- Played a key role in fundraising over $200MM in private and corporate development during the Infinite Impact Capital Campaign.
- Overall fundraising has exceeded $275MM during my tenure in the dean's office.
- Successfully hiring about a dozen new faculty per year and hiring eight department heads over the course of my tenure.
- Established a petroleum engineering undergraduate program, a biomedical engineering undergraduate program, and a cyber security undergraduate program.
- Developed a nine-semester double bachelor's degree program in industrial engineering / business administration
- Instituted several new graduate programs, most notably cyber security and operations
- Developed pipeline educational agreements with Mississippi Gulf Coast Community College and established a satellite campus
- Crafted a partnership with the Universite Internationale de Rabat in 2015, which has brought nearly 200 graduate students to the college.

Director, MSU Energy Institute, 2013-2014

The Mississippi State University Energy Institute was created in 2008 to allow for multi-disciplinary research in energy at the university. This center reports to the Vice President for Research and Economic Development and the Vice President of the Division of Agriculture, Forestry, and Veterinary Medicine.

- Supervised a staff of 30 at the Institute for Clean Energy Technology, with funded projects through national labs and the federal government in filtration in nuclear energy

applications.

- Oversight of the Sustainable Energy Research Center, with a focus on transforming agricultural crops into liquid transportation fuels at the laboratory and pilot scale.
- Worked with the university administration, deans and department heads, and faculty to target large funding opportunities,
- Worked with state government and national laboratories on projects of mutual interest and growing resources committed to improving energy independence.

Director, Dave C. Swalm School of Chemical Engineering, 2011-2014

The Swalm School of Chemical Engineering is recognized internationally for excellence in teaching and research activities, and is one of eight academic departments in the Bagley College of Engineering.

- Provided leadership to 9 tenure track faculty, research faculty and staff, 3 permanent staff, over 350 undergraduate, and about 25 graduate students.
- The university budget for the School was approximately $1M with an additional $4M in externally sponsored research.
- Successfully hired a new faculty member, mentored two junior, six mid-career, and one senior faculty member
- Grew the number of full-time doctoral students in the program by 40%
- Increased the School endowment book value from $11.1M to $12.4M with an additional $2M in pledges including new student and endowed chair initiatives
- Instituted an aggressive visibility campaign using bi-monthly newsletters and social media to connect with alumni, students, faculty, and staff.

Additional Experience:

8/2011 - present:	Professor with Tenure Dave C. Swalm School of Chemical Engineering Mississippi State University
2006 - 2011:	Associate Professor with Tenure, Department of Chemical Engineering, Michigan Technological University
2000 - 2006:	Assistant Professor, Department of Chemical Engineering, Michigan Technological University

Education:

2000 Ph.D., Chemical Engineering, University of Notre Dame
Grade Point Average: 3.9/4.0
Academic Advisors: Hsueh-Chia Chang and David T. Leighton, Jr.
Dissertation Topic: "Novel Reactor Designs for Pollution Reduction Utilizing Enhanced Transient Thermal Dispersion"
Passed Ph.D. defense in August 2000 with degree conferred January 2001

1995 B.S.Ch.E., The University of Akron, *Summa Cum Laude*
Minors in Mathematics and Chemistry
Polymer Specialization Certificate
Grade Point Average: 3.9/4.0

Professional Service:

Significant Service to Mississippi State University:

- Chair, Assistant Vice President for Enrollment Search Committee, 2015-2016
- Provost Search Committee, 2015-2016
- Treasurer, Phi Kappa Phi Honor Society, 2013-present
- Bagley College of Engineering Capital Campaign Planning Committee, 2011
- Chair, University Committee on a Coordinated Campus-Wide Safety Office, 2011-2012

Significant Service to Michigan Technological University:

- Coordinator, Strategic Faculty Hiring Initiative (SFHI) in Energy and Health, 2010-2011 (Advisor to Chair & Co-Chair)
- Associate Coordinator, Strategic Faculty Hiring Initiative (SFHI) in Computing, 2008-2009
- Department of Chemical Engineering Promotion and Tenure Committee (2008-2009)
- Chair, Department Graduate Committee (2008-2009)
- Vice Chair, Strategic Faculty Hiring Initiative (SFHI) in Sustainability, 2008
- Co-Chair (with D. Michalek), MTU Research Symposium (January 2007)
- Department Chair Search Committee (2006-2007)
- Chair, James and Lorna Mack Chair In Bio-Engineering Search Committee (2006-2007)
- Research Advisory Council (2006-2007)
- President, MTU Graduate Faculty Council (2006-2007)

Significant External Service:

- Moderator / Lead Panelist, Open Mic Session on ChatGPT in ChE and Other Topics, American Society for Engineering Education 2023 Annual Meeting, June 2023, Baltimore, MD
- ASEE Diversity Committee, 2021-present
- Chair, Education Division, American Institute of Chemical Engineers, 2013-2015
- University of Kentucky, Paducah - Engineering Advisory Committee, 2012-2014
- Vice President, Annunciation Catholic School Parent School Association, 2012-2013
- AIChE Program Chair Meeting, Houston, TX, 2012
- 1st Vice-Chair, Education Division, American Institute of Chemical Engineers, 2011-2013
- Advisory Board, American Institute of Chemical Engineers Center for Energy Initiatives, 2010-2011
- President, MTU Preschool, 2010-2011
- 2nd Vice-Chair, Education Division, American Institute of Chemical Engineers, 2009-2011
- Trustee, CACHE Corporation (Computer Aids for Chemical Engineering), 2008-2011
- Vice Chair, Education Programming Group (4a), American Institute of Chemical Engineers, 2007-2009
- Publications Board, Chemical Engineering Education journal, 2008-2013
- American Society for Engineering Education, Chemical Engineering Division, Programming Chair, 2007-2008 (in preparation for 2008 ASEE Annual Meeting).
- American Society for Engineering Education, New Engineering Educators, Past Division Chair, 2006-2007 (in preparation for 2007 ASEE Annual Meeting).
- American Institute of Chemical Engineers, Catalysis and Reaction Engineering Division, Programming Chair for Reaction Engineering, 2005-2006 (in preparation for 2006 and

2007 AIChE Annual Meetings).
- American Society for Engineering Education, New Engineering Educators, Division Chair, 2005-2006 (in preparation for 2006 ASEE Annual Meeting).
- American Society for Engineering Education, New Engineering Educators, Program Chair, 2004-2005 (in preparation for 2005 ASEE Annual Meeting).
- American Institute of Chemical Engineers, Catalysis and Reaction Engineering Division, Programming Vice Chair for Reaction Engineering, 2004-2005 (in preparation for 2005 and 2006 AIChE Annual Meetings).

Honors and Awards:

- David Himmelblau Award for Innovations in Computer-Based Chemical Engineering Education, Computing & Systems Technology Division, American Institute of Chemical Engineers (to be awarded at the 2013 annual meeting)
- Joseph J. Martin Award, American Society for Engineering Education Chemical Engineering Division (awarded in 2011 for the best paper from the 2010 annual meeting)
- Academy of Teaching Excellence, Michigan Technological University (2010)
- Frederick D. Williams Instructional Innovation Award (2010)
- Finalist, Michigan Technological University 2010 Distinguished Teaching Award, Professor / Associate Professor Category
- Raymond W. Fahien Award, for Outstanding Teaching Effectiveness and Educational Scholarship, American Society for Engineering Education (2008)
- AIChE Teacher of the Year Award (2010)
- Omega Chi Epsilon Teacher of the Year (2008, as selected by the Junior class)
- Omega Chi Epsilon Outstanding Undergraduate Research Mentor Award (2003)
- 3M Nontenured Faculty Grant (2003 with renewal in 2005)
- Omega Chi Epsilon Teaching Excellence Award (2002)
- Eli and Helen Shaheen Graduate School Award, University of Notre Dame (2001)
- Outstanding Graduate Teaching Award, Kaneb Center for Teaching and Learning, University of Notre Dame (2000)

Complete listing of other service activities in supplement.

Research and Scholarship:

Highlights:

- > 50 Refereed Journal Publications (listed below)
- 3 Book Chapters (listed below)
- > 40 Refereed Conference Publications (listed below)
- 24 Funded Research and Faculty Development Proposals (listed below)
- 8 PhD and 7 MS degrees supervised or co-supervised (listed below)
- *Additional info (in supplement):*
    - *> 120 Technical Conference Presentations*
    - *14 Invited Lectures*
    - *4 Engineering Case Studies*
    - *5 Engineering Textbook Problems*
    - *> 50 undergraduate / other graduate students supervised*

Refereed Journal Publications (* inidcates corresponding author):

54. L. G. Bullard, **J. M. Keith**, D. L. Silverstein, D. P. Visco*, and C. Henderson, "Becoming an Agent of Change: Theory and Strategy for Effective Change Planning and Implementation for New and Early Career Faculty," *Chemical Engineering Education*, in press.

53. N. Zangeneh, V. Guda, H. Toghiani, and **J. M. Keith***, "Sinter-Resistant and Highly Active Sub-5 nm Bimetallic Au-Cu Nanoparticle Catalysts Encapsulated in Silica for High-Temperature Carbon Monoxide Oxidation," *ACS Appl. Mater. Interfaces*, **10**, 4776-4785, 2018.

52. D. Crowl* and **J. M. Keith**, "Characterize Reactive Chemicals with Calorimetry," *Chemical Engineering Progress*, **109(7)**, 26-33, 2013.

51. D. Huang and **J. M. Keith***, "Modeling of Diesel Particulate Filter Regeneration Under the Urban Dynamometer Driving Schedule," *International Journal of Chemical Reactor Engineering,* **10**, A73:1-22, 2012.

50. M. D. Via, J. A. King*, **J. M. Keith**, I. Miskioglu, M. J. Cieslinski, J. J. Anderson, and. G. Bogucki, "Tensile Modulus Modeling of Carbon Black / Polycarbonate, Carbon Nanotube / Polycarbonate, and Exfoliated Graphite Nanoplatelet / Polycarbonate Composites," *Journal of Applied Polymer Science,***124**, 2269-2277, 2012.

49. M. D. Via, J. A. King*, **J. M. Keith**, and G. Bogucki, "Electrical Conductivity Modeling of Carbon Black / Polycarbonate, Carbon Nanotube / Polycarbonate, and Exfoliated Graphite Nanoplatelet / Polycarbonate Composites," *Journal of Applied Polymer Science,* **124**, 182-189, 2012.

48. **J. M. Keith***, D. P. Visco, D. L. Silverstein, and L. G. Bullard, "Ideas to Consider for New Chemical Engineering Educators: Part 2 (Courses Offered Later in the Curriculum)," *Chemical Engineering Education*, **44(4)**, 306-317 and 298, 2010.

Note: This paper is also published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 72, (Summer 2011). The newsletter is available online at: http://cache.org/summer-2011-newsletter

47. T. N. G. Adams, T. R. Olson, J. A. King*, and **J. M. Keith**, "In-Plane Thermal Conductivity Modeling of Carbon Filled Liquid Crystal Polymer Based Resins," *Polymer Composites*, **32(1)**, 147-157, (2011).

46. D. Lopez Gaxiola, **J. M. Keith***, N. Mo, J. A. King, and B. A. Johnson, "Predicting Thermal Conductivity of Multiple Carbon Fillers in Polypropylene Based Resins", *Journal of Composite Materials*, **45(12)**, 1271-1284 (2011).

45. D. Lopez Gaxiola, M. M. Jubinski, **J. M. Keith***, J. A. King, and I. Miskioglu, "Effects of Carbon Fillers on Tensile and Flexural Properties in Polypropylene-Based Resins," *Journal of Applied Polymer Science*, **118(3)**, 1620-1633 (2010).

44. J. A. King*, D. Lopez Gaxiola, B. A. Johnson, and **J. M. Keith**, "Thermal Conductivity of Carbon Filled Polypropylene Based Resins," *Journal of Composite Materials,* **44(7)**, 839-855 (2010).

43. J. A. King*, M.D. Via, **J. M. Keith**, and F. A. Morrison, "Effects of Carbon Fillers on Rheology of Polypropylene Based Resins," *Journal of Composite Materials,* **43(25)**, 3073-3089 (2009).

42. D. Huang and **J. M. Keith***, "Parametric and Sensitivity Analysis of Diesel Particulate Filter Regeneration," *International Journal of Chemical Reactor Engineering,* **7,** A56:1-24 (2009).

41. D. Lopez Gaxiola, **J. M. Keith***, J. A. King, and B. A. Johnson, "Nielsen Thermal Conductivity Model for Single Filler Carbon/Polypropylene Composites," *Journal of Applied Polymer Science*, **114**, 3261-3267 (2009).

40. **J. M. Keith***, D. P. Visco, D. L. Silverstein, "Ideas to Consider for New Chemical Engineering Educators: Part 1 (Courses Offered Earlier in the Curriculum)," *Chemical Engineering Education*, **43(3)**, 207-215 (2009).

Note: This paper is also published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 71, (Winter 2011). The newsletter is available online at: http://www.che.utexas.edu/cache/newsletters/winter2011.html

39. **J. M. Keith***, J. A. King, I. Miskioglu, and S. C. Roache, "Tensile Modulus Modeling of Carbon Filled Liquid Crystal Polymer Composites," *Polymer Composites*, **30**, 1166-1174 (2009).

38. J. A. King*, T. M. Tambling, **J. M. Keith**, A. J. Cole, and F. A. Morrison, "Synergistic Effects of Multiple Carbon Fillers on the Rheology of Liquid Crystal Polymer Based Resins," *Polymer Composites*, **30**, 111-119 (2009).

37. **J. M. Keith***, J. A. King, and B. A. Johnson, "Electrical Conductivity Modeling of Carbon Filled Polypropylene Based Resins for Fuel Cell Bipolar Plate Applications," *Journal of New Materials for Electrochemical Systems*, **11**, 253-257, (2008).

36. R. A. Hauser, **J. M. Keith***, J. A. King, and J. L. Holdren, "Thermal Conductivity Models for Single and Multiple Filler Carbon/Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **110**, 2914-2923 (2008).

35. R. L. Barton, **J. M. Keith***, and J. A. King, "Electrical Conductivity Modeling of Multiple Carbon Fillers in Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plate Applications," *Journal of New Materials for Electrochemical Systems*, **11**, 181-186 (2008).

34. R. A. Hauser, J. A. King*, R. M. Pagel, and **J. M. Keith**, "Effects of Carbon Fillers on the Thermal Conductivity of Highly Filled Liquid Crystal Polymer Based Resins," *Journal of Applied Polymer Science*, **109**, 2145-2155, (2008).

33. J. A. King*, **J. M. Keith**, O. L. Glenn, I. Miskioglu, A. J. Cole, S. M. McLaughlin, and R. M. Pagel, "Synergistic Effects of Carbon Fillers on Tensile and Flexural Properties in Liquid Crystal Polymer Based Resins," *Journal of Applied Polymer Science*, **108**, 1657-1666 (2008).

32. J. A. King*, T. M. Tambling, F. A. Morrison, **J. M. Keith**, A. J. Cole, and Rachel M. Pagel, "Effects of Carbon Fillers on the Rheology of Highly Filled Liquid Crystal Polymer Resins," *Journal of Applied Polymer Science*, **108**, 1646-1656 (2008).

31. J.A. King*, R. A. Hauser, A. M. Tomson, I. M. Wescoat, and **J. M. Keith**, "Synergistic

Effects of Carbon Fillers in Thermally Conductive Liquid Crystal Polymer Based Resins," *Journal of Composite Materials*, **42**, 91-107 (2008).

30. J.A. King*, R. L. Barton, R. A. Hauser, and **J. M. Keith**, "Synergistic Effects of Carbon Fillers in Electrically and Thermally Conductive Liquid Crystal Polymer Based Resins," *Polymer Composites*, **29**, 421-428 (2008).

29. **J. M. Keith***, J. A. King, P W. Grant, A. J. Cole, B. M. Klett, and I. Miskioglu, "Tensile Properties of Carbon Filled Liquid Crystal Polymer Composites," *Polymer Composites*, **29**, 15-21 (2008).

28. R. L. Barton, **J. M. Keith***, and J. A. King, "Development and Modeling of Electrically Conductive Carbon Filled Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plate Applications," *Journal of New Materials for Electrochemical Systems*, **10**, 225-229 (2007).

27. R. L. Barton, **J. M. Keith***, and J. A. King, "Electrical Conductivity Model Evaluation for Carbon Filled Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **106**, 2456-2462 (2007).

26. E. Kunen, **J. M. Keith***, P. W. Grant, J. A. King, and F. A. Morrison, "FEM Calculations of Capillary Rheometer Flow for Carbon-Filled Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **106**, 433-438 (2007).

25. **J. M. Keith***, J. A. King, K. M. Lenhart, and B. Zimny, "Thermal Conductivity Models for Carbon / Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **105**, 3309-3316 (2007).

24. D. A. Crowl and **J. M. Keith***, "Explaining the Convective Term in the Navier-Stokes Equation," *Chemical Engineering Education*, **41 (2)**, Teaching Tip located inside front cover (2007).

23. H. Zheng and **J. M. Keith***, "Averaging Theory for Diesel Particulate Filter Regeneration," *AIChE Journal,* **53**, 1316-1324 (2007).

22. J. A. King*, **J. M. Keith**, R. C. Smith, and F. A. Morrison, "Electrical Conductivity and Rheology of Carbon Fiber / Liquid Crystal Polymer Composites," *Polymer Composites*, **28**, 168-174 (2007).

21. **J. M. Keith**, J. A. King*, M. G. Miller, and A. M. Tomson, "Thermal Conductivity of Carbon Fiber / Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **102**, 5456-5462 (2006).

20. M. G. Miller, **J. M. Keith**, J. A. King*, B. J. Edwards, N. Klinkenberg, and D. A. Schiraldi, "Measuring Thermal Conductivities of Anisotropic Synthetic Graphite-Liquid Crystal Polymer Composites," *Polymer Composites*, **27**, 388-394 (2006).

19. **J. M. Keith***, J. A. King, and R. L. Barton, "Electrical Conductivity Modeling of Carbon-Filled Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **102**, 3293-3300 (2006).

18. J. A. King*, F. Morrison, **J. M. Keith**, M. G. Miller, R. C. Smith, M. Cruz, A. M. Neuhalfen,

and R. L. Barton, "Electrical Conductivity and Rheology of Carbon-Filled Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **101**, 2680-2688 (2006).

17. M. G. Miller, **J. M. Keith***, J. A. King, R. A. Hauser, and A. M. Moran, "Comparison of Guarded Heat Flow and Transient Plane Source Methods for Carbon-Filled Nylon 6,6 Composites: Experiments and Modeling," *Journal of Applied Polymer Science*, **99**, 2144-2151 (2006).

16. F. L. Chan and **J. M. Keith***, "Designing Reverse Flow Packed Bed Reactors for Stable Treatment of Volatile Organic Compounds," *Journal of Environmental Management*, **78**, 223-231 (2006).

15. **J. M. Keith***, C. D. Hingst, M. G. Miller, J. A. King, and R. A. Hauser, "Measuring and Predicting In-Plane Thermal Conductivity of Carbon-Filled Nylon 6,6 Polymer Composites," *Polymer Composites*, **27**, 1-7 (2006).

14. J. A. King*, M. G. Miller, R.L. Barton, **J. M. Keith**, R. A. Hauser, K. Peterson, and L. L. Sutter, "Thermal and Electrical Conductivity of Carbon-Filled Liquid Crystal Polymer Composites," *Journal of Applied Polymer Science*, **99**, 1552-1558 (2006).

13. H. Zheng and **J. M. Keith*** (by invitation), "Thermal Stability of Chemical Reactors," in Encyclopedia of Chemical Processing, Sunggyu Lee, editor, (ISBN 08247555634), Taylor & Francis, Inc., New York, Vol. 4, pp. 2997-3008 (2005).

Note: This work was republished in 2009 as ISBN 978-0-8247-5563-8 (hardback) and 978-0-8247-5499-0 (electronic).

12. D. L. Horstman, D. L. Abata*, **J. M. Keith,** and L. Oberto, "Feasibility Study of an On-Board Natural Gas to Dimethyl Ether Reactor for Dimethyl Ether Pre-Injection and Enhanced Ignition," *ASME Journal of Engineering for Gas Turbines and Power*, **127**, 909-917 (2005).

Note: This paper was first published in ASME – Internal Combustion Engines Fall Conference Proceedings, September, 2002.

11. **J. M. Keith**, N. Janda, J. A. King*, W. F Perger, and T. J. Oxby, "Shielding Effectiveness Density Theory for Carbon Fiber/Nylon 6,6 Composites," *Polymer Composites*, **26**, 671-678 (2005)

10. **J. M. Keith** and D. A. Crowl*, "Estimating Sonic Gas Flow Rates in Pipelines," *Journal of Loss Prevention in the Process Industries*, **18**, 55-62 (2005).

Note: This paper was first published in the 2004 AIChE Spring Meeting Proceedings from the 2004 AIChE Loss Prevention Symposium.

9. N. Janda, **J. M. Keith**, J. A. King*, W. F Perger, and T. J. Oxby, "Shielding Effectiveness Modeling of Carbon Fiber/Nylon 6,6 Composites," *Journal of Applied Polymer Science*, **96**, 62-69 (2005).

8. H. Zheng and **J. M. Keith***, "Ignition Analysis of Wall-Flow Monolith Diesel Particulate Filters," *Catalysis Today*, **98**, 403-412 (2004).

7. H. Zheng and **J. M. Keith***, "New Design for Efficient Diesel Particulate Trap Regeneration," *AIChE Journal*, **50**, 184-191 (2004).

6. H. Zheng and **J. M. Keith***, "JAVA-Based Heat Transfer Visualization Tools," *Chemical Engineering Education*, **38**, 282-285 (2004).

Note: This paper is also published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 62, (Summer 2006). The newsletter is available online at: http://www.che.utexas.edu/cache/newsletters/summer2006_contents.html

5. D. Horstman, D. Abata*, and **J. M. Keith**, "On-Site DME Generation from Methanol for Pilot Injection in CI Engines," *SAE 2003 Transactions, Journal of Fuels and Lubricants*, 2438-2446 (2003) (SAE Paper 2003-01-3198).

Note: This paper is also published in the book *Oxygenated and Alternative Fuels, and Combustion and Flow Diagnostics*, 2003 (ISBN 0-7680-1327-5).

Note: This paper was first published in the 2003 SAE Powertrain & Fluid Systems Conference & Exposition Proceedings

4. **J. M. Keith***, "Controlling Reverse-Flow Reactors via Multiscale Transient Thermal Dispersion," *Advances in Environmental Research*, **7**, 521-535 (2003).

3. **J. M. Keith***, "Novel Scheme for Delaying Reverse-Flow Reactor Runaway," *AIChE Journal*, **48**, 2104-2106 (2002).

2. **J. M. Keith***, H.-C. Chang, and D. T. Leighton, "Designing a Fast-Igniting Catalytic Converter," *AIChE. Journal,* **47**, 650-663 (2001).

1. **J. M. Keith**, D. T. Leighton, and H.-C. Chang*, "A New Design of Reverse-Flow Reactors with Enhanced Thermal Dispersion," *Industrial and Engineering Chemistry Research,* **38**, 667-682 (1999).

Book Chapters (* indicates corresponding author):

3. **J. M. Keith***, "Succeeding in Higher Education in High Gear," accepted chapter in the book Students in High Gear, Amy Howell, editor.

2. **J. M. Keith***, "Cooling of a Fuel Cell," invited publication in the Handbook of Heat Transfer Calculations, McGraw-Hill Publishing Company, Myer Kutz, editor (ISBN 0071410414), 2005.

1. **J. M. Keith***, "Turkey Oven Design Problem," invited publication in the Handbook of Heat Transfer Calculations, McGraw-Hill Publishing Company, Myer Kutz, editor (ISBN 0071410414), 2005.

Refereed Conference Proceedings (* indicates corresponding author):

44. D. Lepek, M. Vigeant, D. Silverstein, **J. Keith**, "How We Teach: Transport Phenomena and Related Courses," American Society for Engineering Education 2015 Annual Meeting Conference Proceedings, June 2015.

43. C. Bodnar, A. Felse, K. High, **J. Keith**, A. Minerick, A. Saterback, J. Cole, "Diversity in Chemical Engineering Education: Status and Perspectives," American Society for Engineering Education 2015 Annual Meeting Conference Proceedings, June 2015.

42. **J. Keith***, L. Rayfield, N. Palsule, "Educational Modules on Solar Energy," American Society for Engineering Education 2014 Annual Meeting Conference Proceedings, June 2014.

41. **J. Keith***, J. Gazzini, R. Sprabery, G. Nelson, and A. L. Thompson, "A Heat Conduction iPhone and iPad App for Engineering Education," American Society for Engineering Education 2013 Annual Meeting Conference Proceedings, June 2013

40. **J. Keith***, B. Elmore, W. French, H. Toghiani, and R. Toghiani, "Using Energy Modules to Introduce Sustainable Engineering and Improve Retention of Chemical Engineering Undergraduate Students," American Society for Engineering Education 2013 Annual Meeting Conference Proceedings, June 2013.

39. W. Weaver*, J. Worm, C. Anderson, J. Naber, J. Beard, L. Bohmann, B. Chen, and **J. Keith**, "An Interdisciplinary Program for Education in Hybrid & Electric Drive Vehicle Engineering," ASEE Conference Proceedings, June 2012.

38. **J. Keith***, B. Elmore, W. French, H. Toghiani, and R. Toghiani, "The Use of Energy Modules as a Mechanism to Introduce Sustainable Engineering and Improve Retention of Chemical Engineering Undergraduate Students at Mississippi State University," American Society for Engineering Education 2012 Southeast Section Conference.

37. C. Hutton, J. Johnson*, J. Naber, and **J. Keith** "Procedure Development and Experimental Study of Passive Particulate Matter Oxidation in a Diesel Catalyzed Particulate Filter," Society of Automotive Engineers 2012 World Congress and Exhibition, SAE Technical Paper number 2012-01-0851.

36. L. Watrous, M. Buche, S. Bagley*, and **J. Keith**, "ADVANCE: An Investigation of the Representation of Female Faculty Candidates at Michigan Technological University, American Society for Engineering Education 2011 North Midwest Section Conference.

35. W. Weaver*, C. Anderson, J. Naber, **J. Keith**, J. Worm, J. Beard and B. Chen, "An Interdisciplinary Program for Education and Outreach in Hybrid and Electric Drive Vehicle Engineering at Michigan Technological University," 2011 IEEE Vehicle Power and Propulsion Conference, Chicago, IL.

34. **J. M. Keith***, D. Lopez Gaxiola, D. Crowl, D. Caspary, J. Naber, J. Allen, A. Mukherjee, D. Meng, J. Lukowski, B. Solomon, J. Meldrum, T. Edgar, "Development and Assessment of Energy Modules in the Chemical Engineering Curriculum," ASEE Conference Proceedings, June 2011.

33. A. Minerick*, **J. M. Keith**, F. Morrison, M. F. Tafur, A. Gencoglu, "Connecting Mass and Energy Balances to the Continuum Scale with COMSOL DEMos," ASEE Conference Proceedings, June 2011.

32. J. Naber*, J. Worm, J. Allen, C. Anderson, J. Beard, J. Burl, **J. Keith**. S. Hackney, W. Weaver, T. Woychowski, and R. Smith, "Curriculum and Delivery in Engineering for Hybrid

Electric Drive Vehicles, Meeting the Needs of the Automotive Industry for New Engineering Talent and Retraining," SAE Technical Paper 2010-01-2302, SAE Convergence 2010, Detroit, MI, October 2010.

31. A. Mukherjee*, **J. M. Keith**, D. Crowl, D. Caspary, J. Allen, D. Meng, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Fuel Cells and Hydrogen Education at Michigan Technological University," International Fuel Cell Science, Engineering & Technology Conference, June 2010.

30. **J. M. Keith***, D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Interdisciplinary Minor in Hydrogen Technology at Michigan Technological University," ASEE Conference Proceedings, June 2010.

29. D. Visco*, D. Silverstein, L. Bullard, and **J. M. Keith**, "Strategies for Creating and Sustaining a Department Culture," ASEE Conference Proceedings, June 2010.

28. G. Hein*, A. Kemppainen, S. Amato-Henderson, **J. M. Keith**, M. Roberts, "Who Creates and Develops First-Year Engineering Design Activities," ASEE Conference Proceedings, June 2010.

27. D. Blekhman*, **J. M. Keith**, A. Sleiti, E. Cashman, P. Lehman, R. Engel, M. Mann, H. Salehfar, "National Hydrogen and Fuel Cell Education Program Part II: Laboratory Practicum," ASEE Conference Proceedings, June 2010.

26. D. Blekhman*, **J. M. Keith**, A. Sleiti, E. Cashman, P. Lehman, R. Engel, M. Mann, H. Salehfar, "National Hydrogen and Fuel Cell Education Program Part I: Curriculum," ASEE Conference Proceedings, June 2010. **2nd place paper award – Energy Conversion and Conservation Division**

25. **J. M. Keith***, D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Curriculum at Michigan Technological University," ASEE Conference Proceedings, June 2009.

24. **J. M. Keith***, D. Silverstein, and D. Visco "Ideas to Consider for New Chemical Engineering Educators: Part 2 (Courses Offered Later in the Curriculum," ASEE Conference Proceedings, June 2009.

23. **J. M. Keith***, D. Silverstein, and D. Visco "Ideas to Consider for New Chemical Engineering Educators: Freshman and Sophomore Level Courses," ASEE Conference Proceedings, June 2008.

22. **J. M. Keith***, D. Chmielewski, H. S. Fogler, V. Thomas, and M. Gross, "CACHE Module Development for Introducing Energy into the Chemical Engineering Curriculum: Fuel Cells," ASEE Conference Proceedings, June 2008. (Nominated for Best Paper).

21. A. R. Minerick*, **J. M. Keith**, and D. Visco "Tips for New Faculty: Engaging Your Graduate Students in Independent Thought," ASEE Conference Proceedings, June 2007.

20. **J. M. Keith***, F. A. Morrison, and J. A. King, "Finite Element Modules for Enhancing Undergraduate Transport Courses: Application to Fuel Cell Fundamentals" ASEE Conference Proceedings, June 2007.

19. J. S. Meldrum*, C.A. Green, G. D. Gwaltney, S. A. Bradley, **J. M. Keith**, and T. F. Podlesak, "Fuel cell powered unmanned ground vehicle," SPIE Conference Proceedings, April 2007.

18. R. A. Hauser, J. A. King*, **J. M. Keith**, R. L. Barton, and M. G. Miller, "Thermal and Electrical Conductivity of Carbon/Liquid Crystal Polymer Composites For Fuel Cell Bipolar Plates," Society of Plastics Engineers Annual Technical Conference Proceedings, 2007.

17. J. Meldrum*, **J. M. Keith**, and K. L. Reynolds, "Enhancement of Engineering Education Through University Competition-Based Events," Proceedings of the 2006 SAE Small Engine Technology Conference & Exposition, San Antonio, TX

16. K. C. Opella and **J. M. Keith***, "Simulation of One-pass Dimethyl Ether Production from Natural Gas for Potential Use in a NG/DME Dual-fuel CI Engine," SAE Paper 2006-01-3358, SAE Powertrain and Fluid Systems Conference Proceedings, October 2006.

15. **J. M. Keith***, "Assistant Professorhood: Your Very Own Startup Company," ASEE Conference Proceedings, June 2006.

14. **J. M. Keith***, K. C. Opella, M. G. Miller, J. A. King, G. D. Gwaltney, C. A. Green, J. S. Meldrum, and S. A. Bradley, "Engineering Education in Alternative Energy," ASEE Conference Proceedings, June 2006.

13. **J. M. Keith***, "The Stanley Cup of Transport Phenomena," ASEE Conference Proceedings, June 2005.

12. A. Minerick* and **J. M. Keith**, "Culture Shock: Acclimating as a New Faculty Member," ASEE Conference Proceedings, June 2005.

11. **J. M. Keith***, "A Student-Driven Enterprise in Fuel Cells and Alternative Fuels," ASEE Conference Proceedings, June 2004.

10. **J. M. Keith***, "Teaching vs. Research: Perspectives from a 4th Year Assistant Professor," ASEE Conference Proceedings, June 2004.

9. **J. M. Keith** and D. A. Crowl*, "New Methods for Estimating Sonic Gas Flow Rates in Pipelines," 2004 AIChE Spring Meeting Proceedings from the 2004 AIChE Loss Prevention Symposium.

8. G. Hein*, K. Torrey, J. Hertl, D. Oppliger, **J. M. Keith**, G. Archer, "Integrating Engineering Disciplines into a Common First Year Engineering Program," ASEE Conference Proceedings, June 2003. **Second place paper award – Freshman Programs Division**

7. H. Zheng and **J. M. Keith***, "Web-Based Instructional Tools for Heat and Mass Transfer," ASEE Conference Proceedings, June 2003.

Note: This paper is also published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 57, pp. 185-198 (Fall 2003). The newsletter is available online at: http://www.che.utexas.edu/cache/newsletters/fall2003_contents.html

6. D. Horstman, D. Abata*, and **J. M. Keith**, "On-Site DME Generation from Methanol for Pilot Injection in CI Engines," 2003 SAE Powertrain & Fluid Systems Conference & Exposition

Proceedings, 2003. (SAE Paper 2003-01-3198).

5. D. L. Horstman, D. L. Abata*, **J. M. Keith**, and L. Oberto, "Feasibility Study of an On-Board Natural Gas to DME Reactor for DME Pre-Injection and Enhanced Ignition," ASME – Internal Combustion Engines Fall Conference Proceedings, September 2002.

4. S. Clancey, **J. M. Keith***, and A. Pintar, "Improving the Chemical Engineering Curriculum through Assessment: Student, Faculty, Staff, Alumni, and Industry Input," ASEE Conference Proceedings, June 2002.

3. **J. M. Keith***, "Learning Outside the Toybox," ASEE Conference Proceedings, June 2002.

2. **J. M. Keith***, C. Dugar, J. Meyer, and N. Norman, "A Hands-On Multidisciplinary Design Course for Chemical Engineering Students," ASEE proceedings, June 2001.

1. W. A. Arnold*, D. H. Mattheisen, and **J. M. Keith**, "Numerical Simulation of Soret Diffusion Effects Using a Shear Cell," 1995. AIAA Paper 96-0502.

<u>Funded Research and Faculty Development Proposals & Projects:</u>

24. Title: "Graduate Recruiting Assistance Grant"
Sponsor: Mississippi State University Graduate School
Amount: $1500 (awarded)
Investigators: **Jason Keith**
Project Period: 9/2011 – 8/2012
Project Effort: 50%

23. Title: "An Interdisciplinary Program for Education and Outreach in Transportation Electrification"
Sponsor: U. S. Department of Energy
Amount: $3,791,030 (awarded)
Investigators: Carl Anderson, Jeff Naber, John Beard, Chris Passerello, Jeremy Worm, Steve Hackney, Wayne Weaver, and **Jason Keith**
Project Period: 11/2009 – 10/2012
Share allocated to Jason Keith: $30,000 as release time to teach courses on hydrogen and fuel cells
Project effort: 5%

22. Title: "Web Animations for Biodiesel Production"
Sponsor: Center for Teaching, Learning, and Faculty Development, Michigan Technological University
Amount: $500 (awarded)
Investigators: **Jason Keith**
Project Period: 10/2009 – 5/2010
Share Allocated to Jason Keith: $500
Project effort: 100%

21. Title: "Experimental Studies for DPF and SCR Model, Control System, and OBD Development for Engines Using Diesel and Biodiesel Fuels"
Sponsor: U. S. Department of Energy
Amount: $2,810,181 (awarded)

Investigators: John Johnson, Jeff Naber, Gordon Parker, Song-Lin Yang, **Jason Keith**, William Partridge, Josh Pihl, Maruthi Devarakonda, and Alla Zelenyuk
Project Period: 9/2009 – 8/2012
Share allocated to Jason Keith: $129,642 for summer support and graduate student
Project effort: 10%

20. Title: "Hydrogen Education Curriculum Path at Michigan Technological University"
Sponsor: U. S. Department of Energy
Amount: $482,244 (awarded)
Investigators: **Jason Keith**, Dan Crowl, Dave Caspary, Jeff Allen, Jeff Naber, Abhijit Mukherjee, Dennis Meng, Barry Solomon, John Lukowski Jay Meldrum
Project Period: 9/2008 – 8/2011
Share allocated to Jason Keith: $482,244 for development of courses and course modules related to hydrogen fuel cells and the hydrogen economy
Project effort: 50%

19. Title: "Center for Fundamental and Applied Research in Nanostructured and Light Weight Materials"
Sponsor: U. S. Department of Energy
Amount: $1,230,000 (awarded)
Investigators: Michael Mullins, Tony Rogers, Joseph Holles, Julia King, **Jason Keith**, Ryan Gilbert, and Jeffrey Allen
Project Period: 2/2008 – 1/2010
Share allocated to Jason Keith: $54,814 for research programs to test and model thermal, electrical, rheological, and tensile properties of lightweight composite materials to be used in fuel cell applications
Project effort: 4%

18. Title: "Modeling and Optimization of Diesel Particulate Trap Regeneration"
Sponsor: Petroleum Research Fund
Amount: $90,000 (awarded)
Investigators: **Jason Keith**
Project Period: 9/2007 – 8/2011
Project effort: 100%

17. Title: "Investigation of Battery Separator Oxidation Resistance"
Sponsor: Microporous Products, L.P.
Amount: $15,000 (awarded)
Investigators: **Jason Keith**, Mary Raber, Rick Berkey
Project Period: 1/2007 – 5/2008
Project effort: 100%

16. Title: "Flow Characterization of Liquid Crystal Polymer / Carbon Composite Melts for Fuel Cell Applications"
Sponsor: Michigan Space Grant Consortium
Amount: $15,600 (awarded)
Investigators: **Jason Keith**
Project Period: 7/2006 – 10/2007
Project effort: 100%

15. Title: “Michigan Technology Center for Nanostructure and Light Weight Materials in the Department of Chemical Engineering at Michigan Technological University”
Sponsor: U. S. Department of Energy
Amount: $500,000 (awarded)
Investigators: Michael Mullins, **Jason Keith**, Joseph Holles, Julia King, Tony Rogers, and Steve Hackney
Project Period: 6/2006 – 5/2007
Share allocated to Jason Keith: $35,000 for research programs to develop and test lightweight materials to be used in fuel cell applications
Project effort: 16%

14. Title: “Unmanned Ground Vehicle Alternative Energy and Sensors Research”
Sponsor: United States Army Research Laboratory
Amount: $860,000 (awarded)
Investigator: Jay Meldrum, Geoff Gwaltney, and **Jason Keith**
Project Period: 8/2005 – 8/2007
Share allocated to Jay Meldrum, Geoff Gwaltney, and Jason Keith: $860,000 for graduate and undergraduate student support, summer salary, equipment, and travel.
Project effort: 30%

13. Title: “Modeling of Transdermal Transport Processes”
Sponsor: 3M Untenured Faculty Grant Renewal
Amount: $15,000 (awarded)
Investigator: **Jason Keith**
Project Period: 4/2005 – 4/2006
Share allocated to Jason Keith: $15,000 of unrestricted funds for research program
Project effort: 100%

12. Title: “GOALI: Development and Modeling of Highly Conductive Carbon Filled Thermoplastic Resins for Fuel Cell Bipolar Plate Applications”
Sponsor: NSF GOALI Program
Amount: $299,500 from NSF (awarded)
Investigators: Julia King, **Jason Keith**, and Eve Steigerwalt
Project Period: 5/2005 – 5/2009
Share allocated to Julia King and Jason Keith: $299,500 for graduate and undergraduate student support, summer salary, equipment, and travel.
Project effort: 50%

11. Title: “Michigan Technology Center for Nanostructure and Light Weight Materials in the Department of Chemical Engineering at Michigan Technological University”
Sponsor: U. S. Department of Energy
Amount: $966,000 (awarded)
Investigators: Michael Mullins, **Jason Keith**, Joseph Holles, Julia King, Tony Rogers, and Steve Hackney
Project Period: 6/2004 – 5/2005
Share allocated to Jason Keith: $144,815 for research programs to develop and test lightweight materials to be used in fuel cell applications
Project effort: 16%

10. Title: “Support for Numerical Modeling in Transport Phenomena and Process Controls at Michigan Technological University”

Sponsor: 3M Foundation
Amount: $5,000 (awarded)
Investigators: Faith Morrison, Tomas Co, and **Jason Keith**
Project Period: 5/2004 – 4/2005
Share allocated to Faith Morrison, Tomas Co, and Jason Keith: $5,000 to purchase FEMLAB class license kit to integrate finite element software into the undergraduate and graduate curriculums
Project effort: 30%

9. Title: "Ignition Improvement of Lean Natural Gas Mixtures"
Sponsor: United States Department of Energy
Amount: $67,173 (awarded)
Investigators: **Jason Keith** and Scott Post
Project Period: 9/2003 – 9/2004
Share allocated to Jason Keith: $67,173 for graduate student support, experimental equipment supplies, summer salary, academic release time, and travel. Jason Keith took over this project (listed as item #3 in this list) as PI for the final year of the project. The total value of the project is $246,835.
Project effort: 50%

8. Title: "Modeling of Transdermal Transport Processes"
Sponsor: 3M Untenured Faculty Grant
Amount: $15,000 (awarded)
Investigator: **Jason Keith**
Project Period: 5/2003 – 5/2004
Share allocated to Jason Keith: $15,000 of unrestricted funds for research program
Project effort: 100%

7. Title: "GCMS Quantitative Facility for Chemical Engineering"
Sponsor: Michigan Technological University Research Excellence Fund
Amount: $70,000 (awarded)
Investigators: Joseph Holles and **Jason Keith**
Project Period: 6/2003-6/2004
Share allocated to Jason Keith and Joe Holles: $70,000 to purchase a GC/MS for research and teaching projects
Project effort: 50%

6. Title: "Infrastructure for the Alternative Energy Enterprise"
Sponsor: Michigan Economic Development Corporation
Amount: $300,000 (awarded)
Investigators: Jay Meldrum and **Jason Keith**
Project Period: 5/2003-4/2004
Share allocated to Jay Meldrum and Jason Keith: $300,000 for equipment and personnel to support the Alternative Fuels Group enterprise program
Project effort: 30%

5. Title: "MULE Diesel/Fuel Cell Hybrid Power Military Ground Transport"
Sponsor: United States Army Tank Automotive and Armaments Command (TACOM)
Amount: $95,000 (awarded)
Investigators: Jay Meldrum and **Jason Keith**
Project Period: 5/2003-4/2004

Share allocated to Jason Keith: $35,000 to run enterprise program in alternative fuels and fuel cells
Project effort: 75%

4. Title: “Web Instruction Tools for Engineers”
Sponsor: Michigan Space Grant Consortium
Amount: $10,570 (awarded)
Investigators: **Jason Keith**
Project Period: 6/2002 – 5/2003
Share allocated to Jason Keith: $10,570 for graduate student support, computer supplies and software, and travel
Project effort: 100%

3. Title: “Ignition Improvement of Lean Natural Gas Mixtures”
Sponsor: United States Department of Energy
Amount: $179,662 (awarded)
Investigators: Duane Abata, **Jason Keith**, and Lee Oberto
Project Period: 10/2001 – 9/2004
Share allocated to Jason Keith: $110,591 for graduate student support, experimental equipment supplies, summer salary, academic release time, and travel. Jason Keith took over as project PI for the final year. (See item 9 above.)
Project effort: 50%

2. Title: “Enhancing the Position of the United States Through Interdisciplinary Development of Fuel Efficient Hybrid Compatible Internal Combustion Engines”
Sponsor: U.S. Department of Education
Amount: $350,000 (awarded)
Investigators: Duane Abata, Carl Anderson, **Jason Keith**, Kirk Schulz, Karl Rundman, Jeff Burl
Project Period: 9/2001 – 8/2005
Share allocated to Jason Keith: Four years of graduate student support for Mr. Kirk Opella, two years of graduate student support for Mr. Dave Horstman, and two years of graduate student support for Mr. Chris Henning
Project effort: 20%

1. Title: “An Industry / Academic Site Visit Program”
Sponsor: Center for Teaching, Learning, and Faculty Development, Michigan Technological University
Amount: $3000 (awarded)
Investigators: **Jason Keith** and Tony Rogers
Project Period: 10/2000 – 5/2001
Share Allocated to Jason Keith and Tony Rogers: $3000
Project effort: 50%

<u>Students receiving graduate degrees under my supervision:</u>

15. Mr. Navid Zanganeh, Ph.D. Program (I am the lead advisor, student is co-advised with Dr. Hossein Toghiani), “Fabrication of Highly Active and Thermally Stable Au-Cu@SiO2 Catalyst for High Temperature Oxidation of Carbon Monoxide Produced By Diesel-Ignited Methane Dual Fuel Low Temperature Combustion in a Single-Cylinder Diesel Engine,” successfully defended PhD dissertation in 2017).

14. Mr. Daniel Lopez Gaxiola, Ph.D. Program (I am the lead advisor, student is co-advised with Dr. Julia King, "Characterization of Thermal and Mechanical Properties of Polypropylene-based Composites for Fuel Cell Bipolar Plates and Development of Educational Tools in Hydrogen and Fuel Cell Technologies," (successfully defended PhD dissertation in June 2011) (Department of Energy support)

13. Mr. Di Huang, Ph.D. Program (I was the only advisor), "Modeling of Diesel Particulate Filter Filtration and Regeneration for Transient Driving Schedules," (successfully defended PhD dissertation in January 2011) (ACS-PRF support)

12. Mr. Di Huang, M.S. Program (I was the only advisor), "Parametric and Sensitivity Study of Monolith Diesel Particulate Filter Regeneration" (received degree September 2008) (ACS-PRF support)

11. Mr. Rodwick Barton, Ph.D. Program (I was the co-advisor with lead advisor Julia King, CM), "Development and Modeling of Electrically Conductive Resins for Fuel Cell Bipolar Plate Applications" (received degree May 2008) (IGERT Traineeship recipient)

10. Ms. Rebecca Hauser, Ph.D. Program (I was the co-advisor with lead advisor Julia King, CM), "Synergistic Effects and Modeling of Thermally Conductive Resins for Fuel Cell Bipolar Plate Applications" (received degree May 2008). (NSF GOALI support)

9. Mr. Troy Tambling, M.S. Program (I was the co-advisor with lead advisor Julia King, CM), "Rheological Studies on the Synergistic Effects of Multiple Carbon Filler Materials in a Liquid Crystal Polymer for Fuel Cell Bipolar Plate Applications" (received degree April 2008).

8. Mr. Mike Miller, Ph.D. Program (I was the co-advisor with lead advisor Julia King, CM), "Development and Modeling of Thermally Conductive Resins for Use in Fuel Cell Bipolar Plates" (received degree September 2006) (GAANN Fellowship recipient)

7. Mr. Haishan Zheng, Ph.D. Program (I was the only advisor), "Thermal Stability and Ignition Characteristics of Wall-Flow Monolith Diesel Particulate Filters" (received degree December 2004) (Thornton Fellowship Recipient).

6. Mr. Nick Janda, M.S. Program, (I was the co-advisor with lead advisor Julia King, CM) "Development of a Predictive Shielding Effectiveness Model for Carbon Fiber / Nylon Based Composites" (received degree August 2004)

5. Mr. Christopher Henning, M. S. Program (I was the co-advisor with lead advisor Prof. Scott Post, ME), "Natural Gas Compression Ignition Engine with Pilot Injection of Dimethyl Ether (DME)" (received degree June 2004) (GAANN Fellowship recipient).

4. Mr. Fan Liang Chan, M. S. Program (I was the only advisor), "Stabilizing Reverse Flow Packed Bed Reactors Through Enhanced Thermal Dispersion Coupled With Improved Energy Retention" (received degree May 2004)

3. Ms. Ling Deng, Ph.D. Program (I was the lead advisor with Prof. Duane Abata, ME, "NO Reduction Catalyst for Diesel Engine Emission Control" (received degree September 2003)

2. Mr. David Horstman, M. S. Program (I was the co-advisor with lead advisor Prof. Duane Abata, ME), "On-Site Dimethyl Ether Generation for Pilot Injection and Enhanced Ignition in

Natural Gas Fueled Compression Ignition Engines" (received degree December 2002) (GAANN Fellowship recipient)

1. Mr. Gautam Pendse, M. S. Program (I was the only advisor), "Fundamentals of Drug Delivery Systems: Modeling of Diffusive, Eroding, and Swelling Systems" (received degree May 2002)

Teaching Experience:

- Required Undergraduate Courses: Process Instrumentation and Control; Fundamentals of Chemical Engineering 2; Transport / Unit Operations 2
- Graduate / Undergraduate Elective Courses: Advanced Reactive Systems Analysis; Advanced Process Computations; Alternative Fuels Group Enterprise; Computational Methods in Chemical Engineering; Fuel Cell Fundamentals; Fundamentals of Hydrogen as an Energy Carrier; Interdisciplinary Design

Complete listing of teaching activities in supplement.

Date of last edit: October 12, 2023

Supplemental Information

Full Listing of Teaching Experience:

Primary Course Instructor at Mississippi State University:

Spring 2014: CHE4223 Process Instrumentation and Control, Dave C. Swalm School of Chemical Engineering (36 students).

Spring 2014: CHE3331 Professional Development Seminar, Dave C. Swalm School of Chemical Engineering (64 students).

Fall 2013: CHE8233 Advanced Process Computations, Dave C. Swalm School of Chemical Engineering (10 students). Teacher rating 4.3 / 5.0

Fall 2013: CHE8011 Graduate Seminar, Dave C. Swalm School of Chemical Engineering

Spring 2013: CHE4223 Process Instrumentation and Control, Dave C. Swalm School of Chemical Engineering (45 students). Teacher rating 4.4 / 5.0

Spring 2013: CHE3331 Professional Development Seminar, Dave C. Swalm School of Chemical Engineering (45 students).

Fall 2012: CHE8011 Graduate Seminar, Dave C. Swalm School of Chemical Engineering

Fall 2012: CHE8233 Advanced Process Computations, Dave C. Swalm School of Chemical Engineering (5 students). Teacher rating 4.6 / 5.0

Spring 2012: CHE4990 Hydrogen Energy Fundamentals, Dave C. Swalm School of Chemical Engineering (10 students). Teacher rating 4.8 / 5.0

Spring 2012: CHE3331 Professional Development Seminar, Dave C. Swalm School of Chemical Engineering (31 students)

Spring 2012: CHE8011 Graduate Seminar, Dave C. Swalm School of Chemical Engineering

Fall 2011: CHE8011 Graduate Seminar, Dave C. Swalm School of Chemical Engineering

Primary Course Instructor at Michigan Technological University:

Spring 2011: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (25 students). Teacher rating: 4.6 / 5.0

Spring 2011: CM2120 Fundamentals of Chemical Engineering 2, Department of Chemical Engineering (83 students). Teacher rating: 4.8 / 5.0

Fall 2010: CM4450 Computational Methods in Chemical Engineering, Department of Chemical Engineering (13 students). Teacher rating: 4.9 / 5.0

Fall 2010: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (22 students). Teacher rating: 4.5 / 5.0

Fall 2010: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (68 students - **I am responsible for developing and teaching the continuous stirred tank reactor experiment**; of which a total of 32 students participated in)

Fall 2010: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (about 23 students). Teacher rating: 4.7 / 5.0

Fall 2010: CM3977 Fundamentals of Hydrogen as an Energy Carrier, Department of Chemical Engineering (about 12 students). Teacher rating: 4.6 / 5.0

Spring 2010: CM3978 Hydrogen Measurements Laboratory, Department of Chemical Engineering (11 students – **this is a new course that I developed at MTU**). Teacher rating: 4.9 / 5.0

Spring 2010: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (23 students). Teacher rating: 4.5 / 5.0

Spring 2010: CM2120 Fundamentals of Chemical Engineering 2, Department of Chemical Engineering (85 students). Teacher rating: 4.7 / 5.0

Fall 2009: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (23 students). Teacher rating: 4.9 / 5.0

Fall 2009: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (68 students - **I am responsible for developing and teaching the packed bed reactor experiment and continuous stirred tank reactor experiment**; of which a total of 64 students participated in)

Fall 2009: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (about 41 students). Teacher rating: 4.9 / 5.0

Fall 2009: CM3977 Fundamentals of Hydrogen as an Energy Carrier, Department of Chemical Engineering (about 32 students – **this is a new course that I developed at MTU**). Teacher rating: 4.8 / 5.0

Spring 2009: MEEM5990 Advanced Propulsion for Hybrid Vehicles Department of Mechanical Engineering – Engineering Mechanics (about 80 students – team taught (Jason Keith taught for 1 week) with several MTU professors. This course is offered by distance learning to laid off GM engineers)

Spring 2009: CM5400 Advanced Reactive Systems Analysis, Department of Chemical Engineering (16 students – team taught with Tim Eisele). Teacher rating: 3.8 / 5.0

Spring 2009: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (20 students) Teacher rating: 4.7 / 5.0

Spring 2009: CM2120 Fundamentals of Chemical Engineering 2, Department of Chemical Engineering (58 students – **this is a required course for all chemical.**

engineering undergraduate majors). Teacher rating: 4.9 / 5.0

Fall 2008: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (11 students) Teacher rating: 4.6 / 5.0

Fall 2008: CM4450 Computational Methods in Chemical Engineering, Department of Chemical Engineering (11 students – **this is a new course that I developed at MTU**) Teacher rating: 4.8 / 5.0

Fall 2008: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (58 students - **I am responsible for developing and teaching the fuel cell laboratory experiment and continuous stirred tank reactor experiment**; of which a total of 32 students participated in)

Spring 2008: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (58 students) Teacher rating: 4.6 / 5.0

Spring 2008: ENG 4950 Alternative Fuels Group Enterprise, College of Engineering (about 14 students) Teacher rating: 4.6 / 5.0

Fall 2007: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 16 students) Teacher rating: 4.9 / 5.0

Fall 2007: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (about 24 students) Teacher rating: 4.8 / 5.0

Fall 2007: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (55 students - **I am responsible for developing and teaching the fuel cell laboratory experiment and liquid-liquid extraction experiment**; of which a total of 30 students participated in)

Spring 2007: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (55 students) Teacher rating: 3.7 / 5.0

Spring 2007: ENG 4950 Alternative Fuels Group Enterprise, College of Engineering (about 25 students) Teacher rating: 4.6 / 5.0

Fall 2006: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 25 students) Teacher rating: 4.4 / 5.0

Fall 2006: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (about 21 students) Teacher rating: 4.8 / 5.0

Fall 2006: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (40 students - **I am responsible for developing and teaching the fuel cell laboratory experiment**; of which 12 students participated in)

Spring 2006: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (45 students) Teacher rating: 4.2 / 5.0

Spring 2006: ENG 4950 Alternative Fuels Group Enterprise, College of Engineering (about 40 students) Teacher rating: 4.4 / 5.0

Fall 2005: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 23 students) Teacher rating: 4.3 / 5.0

Fall 2005: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (about 10 students) Teacher rating: 4.7 / 5.0

Fall 2005: CM4110 Unit Operations Laboratory, Department of Chemical Engineering, team taught by several CM faculty (45 students – **I am responsible for developing and teaching the fuel cell laboratory experiment**; of which 11 students participated in)

Spring 2005: CM5400 Advanced Reactive Systems Analysis, Department of Chemical Engineering (10 students – **this is the graduate reactor design course at MTU**) Teacher rating: 4.7/5.0

Spring 2005: ENG 4950 Alternative Fuels Group Enterprise, College of Engineering (about 35 students) Teacher rating:4.2 / 5.0

Fall 2004: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 34 students) Teacher rating: 4.4/5.0

Fall 2004: CM3974 Fuel Cell Fundamentals, Department of Chemical Engineering (20 students- **this is a new course that I developed at MTU**) Teacher rating: 4.7/5.0

Spring 2004: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 38 students) Teacher rating: 4.7/5.0

Spring 2004: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (66 students) Teacher rating 4.3/5.0

Fall 2003: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 48 students) Teacher rating: 4.9 / 5.0

Spring 2003: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 29 students) Teacher rating: 4.9 / 5.0

Spring 2003: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (64 students). Teacher rating: 4.3 / 5.0

Fall 2002: ENG4950 Alternative Fuels Group Enterprise, College of Engineering (about 28 students – **this is an undergraduate applied research project sponsored by the U.S. Army, which I developed with the help of students from the CM4900 course I taught in Fall 2001**) Teacher rating: 5.0 / 5.0

Fall 2002: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (1 student – independent study with weekly meetings)

Spring 2002: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering

(57 students). Teacher rating: 4.2 / 5.0

Fall 2001: CM4900 Interdisciplinary Design, Department of Chemical Engineering (8 students). Teacher rating: 4.9 / 5.0

Fall 2001: CM3215: Fundamentals of Chemical Engineering Laboratory, Department of Chemical Engineering, taught jointly with Dr. Nam Kim (56 students). Teacher rating: 4.0 / 5.0

Summer 2001: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (1 student – independent study with weekly meetings)

Spring 2001: CM3120 Transport / Unit Operations 2, Department of Chemical Engineering (80 students – **this is a required course for all chemical. engineering undergraduate majors**). Teacher rating: 4.2 / 5.0

Fall 2000: CM4900 Interdisciplinary Design, Department of Chemical Engineering, (3 students – **this is a new course that I developed at MTU**). Teacher rating: 5.0 / 5.0

Graduate Instructor at the University of Notre Dame:

Spring 2000: EG112 Introduction to Engineering Systems, College of Engineering, University of Notre Dame (25 students)
Supervisors: Professor Jay Brockman and Professor Thomas Fuja

Fall 1999: EG111 Introduction to Engineering Systems, College of Engineering, University of Notre Dame (25 students)
Supervisors: Professor Jay Brockman and Professor Thomas Fuja

Fall 1997: CHEG 343 Thermodynamics II, Department of Chemical Engineering, University of Notre Dame (60 students)
Supervisor: Professor Joan Brennecke

Teaching Assistant for 4 courses at Notre Dame: Computer Methods for Chemical Engineers (twice), Mathematical Methods I, Chemical Engineering Laboratory

Supplemental Information on Research and Scholarship:

Media coverage of our research and teaching programs:

- "AIChE / CACHE Modules on Energy in the Curriculum," CACHE Newsletter, Vol. 73, Winter 2012.
- "New Department Heads Bring New Focus, Big Plans to College," Momentum Magazine, December 2011.
- "Alternative Fuels Enterprise Goes Solar, And More," Tech Today, April 2011.
- "The AIChE Energy Initiative," *Chemical Engineering Progress,* August 2010.
- "Bring Fuel Cells into Your Course with Modules," CACHE Newsletter, Vol. 69, Winter 2010.
- "The Truly Interdisciplinary Search," Inside Higher Ed, September 2008, available online at: http://www.insidehighered.com/layout/set/print/news/2008/09/05/michtech.

- "Fuel Cells in Your Future?," MTU Research Magazine, February 2008.
- "College Teams from Across U.S. Find Alternative Fuels for Annual Shoebox-Size Car Race During AIChE National Meeting," AIChE Press Release, November 2006
- "Flow Characterization of Liquid Crystal Polymer / Carbon Composite Melts for Fuel Cell Applications," Michigan in Space, September 2006
- "$500,000 Earmark to MTU Chemical Engineering," Daily Mining Gazette, November 2005
- "Alternative Fuels Students Support Humane Society," TechTopics, April 2005.
- "Ready and Raring to Go: Students Gear Up for the 2004 Chem-E-Car Competition," *Chemical Engineering Progress*, p. 59, October 2004.
- "AIChE Competes in 'Frisco," Michigan Tech Lode, December 2003.
- "Chem-E-Car Takes Second Place in Nationals," TechTopics, December 2003.
- "Michigan Tech Nano Research Gets $1 Million Boost from House," Daily Mining Gazette, November 2003.
- "Famous Wheels Come to Tech," Michigan Tech Lode, October 2003.
- "Clean Machines," ASEE Prism, p. 34-38, September 2003.
- "United Parcel Service to Beta-Test Fuel Cells in Delivery Vehicles," National Public Radio, May, 2003.
- "Hydrogen Powered Vehicles," WLUC-TV6, January, 2003.
- "Michigan Tech's Chem-E-Car," WLUC-TV6, November, 2002.
- "Michigan Tech Recruiting Fair," WLUC-TV6, October, 2002.
- "Catalytic Converter Features Quick Lightoff," Research & Development Update, *Chemical Engineering Progress,* p. 15, March 2001.

Engineering Case Studies (* indicates corresponding author)

4**. J. M. Keith***, "Hydrogen from Coal for Use in Fuel Cells," invited publication of ME Cases published by Knovel, available online at: http://www.knovel.com/web/portal/basic_search/display?_EXT_KNOVEL_DISPLAY_bookid=4332

3**. J. M. Keith***, "The Chemistry of Biodiesel Production," invited publication of ME Cases published by Knovel, available online at: http://engineeringcases.knovelblogs.com/2010/09/14/chemistry-of-biodiesel-production/

2. **J. M. Keith***, "The Short Term Hydrogen Economy: Fueling Fuel Cells from Natural Gas," invited publication of ME Cases published by Knovel, available online at: http://engineeringcases.knovelblogs.com/2010/05/19/the-short-term-hydrogen-economy-fueling-fuel-cells-from-natural-gas

1. **J. M. Keith***, "Fuel Cell Sizing Made Easy," invited publication of ME Cases published by Knovel, available online at: http://www.knovel.com/web/portal/basic_search/display?_EXT_KNOVEL_DISPLAY_bookid=3117 or http://engineeringcases.knovelblogs.com/2010/02/02/fuel-cell-sizing-made-easy/#more-467

Engineering Textbook Problems (* indicates corresponding author):

5. **J. M. Keith***, "Energy Balances on a Solid Oxide Fuel Cell and Cogeneration Unit," in Elementary Principles of Chemical Processes, to appear in R. M. Felder, R. W. Rousseau, J.

Newell, 4th Edition, Wiley.

4. **J. M. Keith***, "Energy Balances on a Solid Oxide Fuel Cell," in Elementary Principles of Chemical Processes, to appear in R. M. Felder, R. W. Rousseau, J. Newell, 4th Edition, Wiley.

3. **J. M. Keith***, "Fuel Cell Membrane Humidification," in Elementary Principles of Chemical Processes, to appear in R. M. Felder, R. W. Rousseau, J. Newell, 4th Edition, Wiley.

2. **J. M. Keith***, "Hydrogen Storage in a Tube Trailer," in Elementary Principles of Chemical Processes, to appear in R. M. Felder, R. W. Rousseau, J. Newell, 4th Edition, Wiley.

1. **J. M. Keith***, "Fuel Cell for Apartment Complex," in Elementary Principles of Chemical Processes, to appear in R. M. Felder, R. W. Rousseau, J. Newell, 4th Edition, Wiley.

Invited Lectures

14. **J. M. Keith** (invited speaker), "Becoming an Agent of Change: Theory and Strategy for Effective Change Planning and Implementation for New and Early Career Faculty", 2022 Chemical Engineering Summer School, Golden, CO. Portion of session organized by D. Visco, C. Henderson, D. Silverstein, L. Bullard, and J. Keith.

13. J. M. Keith (invited speaker), "Thermal Stability and Transient Modeling of Diesel Engine Emissions Aftertreatment," 2012, Auburn University Department of Chemical Engineering Seminar Series, Auburn, AL.

12. **J. M. Keith** (invited speaker), "Research and Education in Fuel Cell Materials," 2010, Oklahoma State University School of Chemical Engineering Seminar Series, Stillwater, OK.

11. **J. M. Keith** (invited speaker), "Academic Job Search Panelist," 2010 ASEE Annual Meeting, Louisville, KY.

10. **J. M. Keith** (invited speaker), "New Ideas for Old Courses II: Kinetics and Reactor Design", 2007 Chemical Engineering Summer School, Pullman, WA. Portion of session organized by D. Visco, D. Silverstein, and J. Keith.

9. **J. M. Keith** (invited speaker), "New Ideas for Old Courses II: Heat and Mass Transfer", 2007 Chemical Engineering Summer School, Pullman, WA. Portion of session organized by D. Visco, D. Silverstein, and J. Keith.

8. **J. M. Keith** (invited speaker), "New Ideas for Old Courses I: Fluid Mechanics", 2007 Chemical Engineering Summer School, Pullman, WA. Portion of session organized by D. Visco, D. Silverstein, and J. Keith.

7. **J. M. Keith** (invited speaker), "Young Faculty Forum Panelist," 2005 AIChE Annual Meeting, Cincinnati, OH.

6. **J. M. Keith** (invited speaker), "Building a Better Particulate Trap," 2004, Mississippi State University School of Chemical Engineering Seminar Series, Mississippi State, MS.

5. **J. M. Keith** (invited speaker), "Igniting Diesel Particulate Traps: Revisiting Thermal Stability Theory," 2004, University of Houston Reaction Engineering Seminar, Houston, TX.

4. **J. M. Keith** (invited speaker), “Transient Diffusion: Application to Drug Permeation,” 2004, 3M Center, St. Paul, MN.

3. **J. M. Keith** (invited speaker), “Designing Monolithic Diesel Particulate Filters,” 2004, University of Notre Dame Department of Chemical Engineering Seminar Series, Notre Dame, IN.

2. **J. M. Keith** (invited speaker), “Reaction Engineering for Pollution Reduction,” 2001, Interdisciplinary Center for Advanced Propulsion Seminar, Michigan Technological University, Houghton, MI.

1. **J. M. Keith** (invited speaker), "New Reactor Designs for Pollution Reduction in Gasoline and Diesel Fueled Vehicles," 2001, The University of Akron Department of Chemical Engineering Seminar Series, Akron, OH.

Technical Presentations:

120. N. Zanganeh (speaker), H. Toghiani, and **J. Keith**, “Low Temperature Oxidation of Carbon Monoxide Produced By Diesel-Ignited Methane Dual Fuel Low Temperature Combustion in a Single-Cylinder Diesel Engine,” American Institute for Chemical Engineers Annual Meeting Conference Proceedings, November 2014.

119. **J. Keith* (speaker)**, J. Mohammadi-Aragh, J. Warnock, B. Elmore, “Incorporating Engineering into the First-Year Curriculum,” American Institute for Chemical Engineers Annual Meeting Conference Proceedings, November 2014.

118. L. Bullard, D. Silverstein, D. Visco, and **J. Keith**, “ChE Summer School Revisited: Course-Specific Applications of Active Learning Techniques,” American Institute for Chemical Engineers Annual Meeting Conference Proceedings, November 2013.

117. **J. Keith* (speaker)**, J. Gazzini, R. Sprabery, G. Nelson, and A. L. Thompson, “Heat Transfer for Students: An iPhone and iPad App for Chemical Engineering Enthusiasts,” American Institute for Chemical Engineers Annual Meeting Conference Proceedings, November 2013.

116. **J. Keith* (speaker)**, J. Gazzini, R. Sprabery, G. Nelson, and A. L. Thompson, “A Heat Conduction iPhone and iPad App for Engineering Education,” American Society for Engineering Education 2013 Annual Meeting Conference Proceedings, June 2013

115. **J. Keith* (speaker)**, B. Elmore, W. French, H. Toghiani, and R. Toghiani, “Using Energy Modules to Introduce Sustainable Engineering and Improve Retention of Chemical Engineering Undergraduate Students,” American Society for Engineering Education 2013 Annual Meeting Conference Proceedings, June 2013.

114. **J. Keith***, B. Elmore, W. French, H. Toghiani, and R. Toghiani, “Energy and Sustainability Modules in Chemical Engineering at Mississippi State University,” 2012 AIChE Annual Meeting, Pittsburgh, PA.

113. D. Visco (speaker), D. Silverstein, L. Bullard, and **J. M. Keith**, “Strategies for Creating and Sustaining a Department Culture: Turning Theory into Action,” 2012 AIChE Annual Meeting, Pittsburgh, PA.

112. **J. M. Keith*** (speaker), B. Elmore, W. French, H. Toghiani, R. Toghiani, "The Use of Energy Modules as a Mechanism to Introduce Sustainable Engineering and Improve Retention of Chemical Engineering Undergraduate Students at Mississippi State University," 2012 ASEE Southeast Section Conference, Mississippi State, MS.

111. J. Sandell (speaker), D. Caspary, and **J. M. Keith*** "Using Pilot Plants in a Capstone Unit Operations Laboratory Course to Create a Chemical Manufacturing Experience," 2011 AIChE Annual Meeting, Minneapolis, MN.

110. **J. M. Keith* (speaker)**, D. Lopez Gaxiola, D. Crowl, D. Caspary, A. Mukherjee, D. Meng, J. Naber, J. Allen, J. Lukowski, B. Solomon, J. Meldrum, T. Edgar, "Energy Modules for Hydrogen and Fuel Cells in the Chemical Engineering Curriculum," 2011 AIChE Annual Meeting, Minneapolis, MN.

Note: This paper is also published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 73, (Winter 2012). The newsletter is available online at: http://cache.orgwinter-2012-newsletter/

109. S. DeLand, G. Parker, **J. Keith* (speaker)**, and J. Johnson, "A Parameterized Iron-Zeolite Model Calibrated to Reactor Data," 2011 AIChE Annual Meeting, Minneapolis, MN.

108. L. Watrous, M. Buche, S. Bagley*, and **J. Keith**, "ADVANCE: An Investigation of the Representation of Female Faculty Candidates at Michigan Technological University, American Society for Engineering Education 2011 North Midwest Section Conference.

107. W. Weaver* (speaker), C. Anderson, J. Naber, **J. Keith**, J. Worm, J. Beard and B. Chen, "An Interdisciplinary Program for Education and Outreach in Hybrid and Electric Drive Vehicle Engineering at Michigan Technological University," 2011 IEEE Vehicle Power and Propulsion Conference, Chicago.

106. D. Caspary*, J. Sandell, A. Minerick (co-speaker), and **J. M. Keith (co-speaker)**, "Intended Outcomes of a Unit Operations Laboratory Experience," 2011 ASEE Annual Meeting, Vancouver, BC.

105. **J. M. Keith* (speaker)**, D. Lopez Gaxiola, D. Crowl, D. Caspary, A. Mukherjee, D. Meng, J. Naber, J. Allen, J. Lukowski, B. Solomon, J. Meldrum, T. Edgar, "Development and Assessment of Energy Modules in the Chemical Engineering Curriculum," 2011 ASEE Annual Meeting, Vancouver, BC.

104. A. Minerick* (speaker) and **J. M. Keith**, "Connecting Mass and Energy Balances to the Continuum Scale with COMSOL DEMos," 2011 ASEE Annual Meeting, Vancouver, BC.

103. **J. M. Keith** (speaker), D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Curriculum Path at Michigan Technological University," 2011 DOE Hydrogen Program Annual Merit Review, Alexandria, VA.

102. J. Johnson, G. Parker (speaker), J. Naber, S. Yang, and **J. M. Keith**, "Experimental Studies for DPF and SCR Model, Control System, and OBD Development for Engines Using Diesel and Biodiesel Fuels," 2011 DOE Hydrogen Program Annual Merit Review, Alexandria, VA.

101. J. Naber (speaker), C. Anderson, J. Allen, J. Beard, C. Passerello, J. Worm, S. Hackney, W. Weaver, B. Chen, J. Burl, J. Meldrum, C. Green, and **J. M. Keith**, "An Interdisciplinary Program for Education and Outreach in Transportation Electrification," 2011 DOE Hydrogen Program Annual Merit Review, Alexandria, VA.

100. D. Huang (speaker) and **J. M. Keith**, "Modeling of Diesel Particulate Regeneration for Transient Driving Schedules," 2010 AIChE Annual Meeting, Salt Lake City, UT.

99. D. Lopez Gaxiola (speaker), M. Jubinski, **J. M. Keith**, J. A. King, and I. Miskioglu, "Tensile and Flexural Properties in Carbon-Filled Polypropylene-Based Resins," 2010 AIChE Annual Meeting, Salt Lake City, UT.

98. L. Bullard (speaker), D. Visco (speaker), D. Silverstein, and **J. M. Keith**, "The Faculty Perspective on Student Interaction with a Department Culture," 2010 AIChE Annual Meeting, Salt Lake City, UT.

97. **J. M. Keith (speaker)**, D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "An Interdisciplinary Minor in Hydrogen Technology at Michigan Technological University," 2010 AIChE Annual Meeting, Salt Lake City, UT.

96. **J. M. Keith (speaker)**, T. F. Edgar, G. P. Towler, H. S. Fogler, D. A. Crowl, D. T. Allen, D. Schuster, "Energy Modules for the ChE Curriculum," 2010 AIChE Annual Meeting, Salt Lake City, UT.

95. D. Lopez Gaxiola (speaker) and **J. M. Keith**, "Hydrogen and Fuel Cell Workbook for Material and Energy Balances," 2010 AIChE Annual Meeting, Salt Lake City, UT.

94. J. Naber (speaker), J. Worm, J. Allen, C. Anderson, J. Beard, J. Burl, **J. Keith**. S. Hackney, W. Weaver, T. Woychowski, and R. Smith, "Curriculum and Delivery in Engineering for Hybrid Electric Drive Vehicles, Meeting the Needs of the Automotive Industry for New Engineering Talent and Retraining," SAE Convergence 2010, Detroit, MI, October 2010.

93. A. Mukherjee (speaker), **J. M. Keith**, D. Crowl, D. Caspary, J. Allen, D. Meng, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Fuel Cells and Hydrogen Education at Michigan Technological University," International Fuel Cell Science, Engineering & Technology Conference, June 2010.

92. **J. M. Keith (speaker)**, D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Interdisciplinary Minor in Hydrogen Technology at Michigan Technological University," 2010 ASEE Annual Meeting, Louisville, KY.

91. D. Visco (speaker), D. Silverstein, L. Bullard, and **J. M. Keith**, "Strategies for Creating and Sustaining a Department Culture," 2010 ASEE Annual Meeting, Louisville, KY.

90. G. Hein (speaker), A. Kemppainen, S. Amato-Henderson, **J. M. Keith**, M. Roberts, "Who Creates and Develops First-Year Engineering Design Activities," 2010 ASEE Annual Meeting, Louisville, KY.

89. D. Blekhman (speaker), **J. M. Keith**, A. Sleiti, E. Cashman, P. Lehman, R. Engel, M. Mann, H. Salehfar, "National Hydrogen and Fuel Cell Education Program Part II: Laboratory

Practicum," 2010 ASEE Annual Meeting, Louisville, KY.

88. D. Blekhman (speaker), **J. M. Keith**, A. Sleiti, E. Cashman, P. Lehman, R. Engel, M. Mann, H. Salehfar, "National Hydrogen and Fuel Cell Education Program Part I: Curriculum," 2010 ASEE Annual Meeting, Louisville, KY.

87. M. Mullins (speaker), J. A. King, T. Rogers, **J. M. Keith**, B. Cornilsen, J. Allen, R. Gilbert, J. Holles, "Center for Fundamental and Applied Research in Nanostructured and Lightweight Materials," 2010 DOE Hydrogen Program Annual Merit Review, Washington, DC

86. J. Johnson, G. Parker (speaker), J. Naber, S. Yang, and **J. M. Keith**, "Experimental Studies for DPF and SCR Model, Control System, and OBD Development for Engines Using Diesel and Biodiesel Fuels," 2010 DOE Hydrogen Program Annual Merit Review, Washington, DC.

85. J. Naber (speaker), C. Anderson, J. Allen, J. Beard, C. Passerello, J. Worm, S. Hackney, W. Weaver, B. Chen, J. Burl, J. Meldrum, C. Green, and **J. M. Keith**, "An Interdisciplinary Program for Education and Outreach in Transportation Electrification," 2010 DOE Hydrogen Program Annual Merit Review, Washington, DC.

84. **J. M. Keith** (speaker), D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Curriculum Path at Michigan Technological University," 2010 DOE Hydrogen Program Annual Merit Review, Washington, DC.

83. **J. M. Keith (speaker)**, D. Chmielewski, H. Scott Fogler, and M. Gross, "Update from the CACHE Fuel Cell Task Force," 2009 AIChE Annual Meeting, Nashville, TN.

Note: The slides from this talk are published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 69, (Winter 2010). The newsletter is available online at: http://www.cache.org/newsletters/winter10%20table%20of%20contents.html

82. **J. M. Keith** (speaker), D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Education Curriculum at Michigan Technological University," 2009 AIChE Annual Meeting, Nashville, TN.

81. D. Huang (speaker) and **J. M. Keith**, "Filtration and Pressure Drop Modeling of Diesel Particulate Filters," 2009 AIChE Annual Meeting, Nashville, TN.

80. **J. M. Keith** (speaker), J. A. King, R. L. Barton Carter, R. A. Hauser Wroblewski, and D. Lopez Gaxiola, "Electrical Conductivity of Carbon Filled Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plate Applications," 2009 AIChE Annual Meeting, Nashville, TN.

79. **J. M. Keith**, D. Silverstein, and D. Visco, (all three were speakers) "Ideas to Consider for New Chemical Engineering Educators: Junior and Senior Level Courses," 2009 AIChE Annual Meeting, Nashville, TN.

78. J. A. King, M. D. Via, F. A. Morrison, and **J. M. Keith**, "Electrical Conductivity and Rheology of Carbon Filled Polypropylene-Based Resins, 81st Annual Meeting of the Society of Rheology, 2009, Madison, WI.

77. **J. M. Keith** (speaker), D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Curriculum at Michigan Technological

University," 2009 ASEE Annual Meeting, Austin, TX.

76. **J. M. Keith** (speaker), D. Silverstein, and D. Visco "Ideas to Consider for New Chemical Engineering Educators: Part 2 (Courses Offered Later in the Curriculum," ASEE Conference Proceedings, 2009 ASEE Annual Meeting, Austin, TX.

75. J. A. King (speaker), M. Mullins, T. Rogers, **J. M. Keith**, B. Cornilsen, J. Allen, R. Gilbert, J. Holles, "Center for Fundamental and Applied Research in Nanostructured and Lightweight Materials," 2009 DOE Hydrogen Program Annual Merit Review, Arlington, VA.

74. **J. M. Keith** (speaker), D. Crowl, D. Caspary, J. Allen, D. Meng, A. Mukherjee, J. Naber, J. Lukowski, J. Meldrum, and B. Solomon, "Hydrogen Curriculum Path at Michigan Technological University," 2009 DOE Vehicle Technologies Program Annual Merit Review, Arlington, VA.

73. D. Huang (speaker) and **J. M. Keith**, "Reactor Stability and Sensitivity Analysis in a Diesel Particulate Filter," 2008 AIChE Annual Meeting, Philadelphia, PA.

72. R. A. Hauser, J. A. King, **J. M. Keith** (speaker), I. M. Wescoat, and R. M. Pagel, "Factorial Design of Thermally Conductive Composite Materials for Fuel Cell Bipolar Plate Applications," 2008 AIChE Annual Meeting, Philadelphia, PA.

71. **J. M. Keith**, D. Chmielewski, H. Scott Fogler, V. Thomas, and M. Gross (speaker), "CACHE Modules on Energy in the Curriculum: Fuel Cells," 2008 AIChE Annual Meeting, Philadelphia, PA.

Note: The slides from this talk are published in the CACHE (Computer Aids for Chemical Engineering) Newsletter, no. 67, (Winter 2008/2009). The newsletter is available online at: http://www.che.utexas.edu/cache/newsletters/winter0809%20table%20of%20contents.html

70. **J. M. Keith**, D. Silverstein, and D. Visco, (all three were speakers) "Ideas to Consider for New Chemical Engineering Educators: Freshman and Sophomore Level Courses," 2008 AIChE Annual Meeting, Philadelphia, PA.

69. W. Li, D. Meng (speaker), J. King, and **J. M. Keith**, "Fuel Cell Materials Research at Michigan Technological University," AET Connect and Collaborate 2008, Detroit, MI.

68. **J. M. Keith** (speaker), "Your Tenure Dossier Should Always be a Work in Progress," 2008 ASEE Annual Meeting, Pittsburgh, PA.

67. **J. M. Keith**, D. Silverstein, and D. Visco (all three were speakers) "Ideas to Consider for New Chemical Engineering Educators: Freshman and Sophomore Level Courses," 2008 ASEE Annual Meeting, Pittsburgh, PA.

66. **J. M. Keith** (speaker), D. Chmielewski, H. Scott Fogler, and V. Thomas, "CACHE Module Development for Introducing Energy into the Chemical Engineering Curriculum: Fuel Cells," 2008 ASEE Annual Meeting, Pittsburgh, PA.

65. J. A. King (speaker), **J. M. Keith,** and E. Steigerwalt, "GOALI: Development and Modeling of Highly Conductive Carbon Filled Thermoplastic Resins for Fuel Cell Bipolar Plate Applications," 2008 NSF CMMI Grantees and Research Conference, Knoxville, TN.

64. H. Scott Fogler, **J. M. Keith** (speaker), and D. J. Chmielewski, "New CACHE Initiatives in Fuel Cell Modules," 2007 AIChE Annual Meeting, Salt Lake City, UT.

63. **J. M. Keith** (speaker), J. A. King, F. A. Morrison, T. M. Tambling, E. Kunen, R. C. Smith, A. J. Cole, P. W. Grant, "Rheological Measurements and Modeling of Carbon-Filled Liquid Crystal Polymer Composites," 2007 AIChE Annual Meeting, Salt Lake City, UT.

62. **J. M. Keith** (speaker), F. A. Morrison, and J. A. King, "FEM using COMSOL: Applications for Fuel Cells," 2007 AIChE Annual Meeting, Salt Lake City, UT.

61. S. McLaughlin (speaker), **J. M. Keith**, and J. A. King, "Effects of Carbon Fillers on Flexural Properties in Liquid Crystal Polymer Based Resins," 2007 NSF REU Student Poster Presentation, Houghton, MI.

60. R. Barton (speaker), J. A. King, **J. M. Keith**, and R. A. Hauser, "Thermal and Electrical Conductivity of Carbon / Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plates, Ford Motor Company, 2007, Dearborn, MI.

59. **J. M. Keith** (speaker), "Engineering Education in Alternative Energy and Transport Phenomena," 2007 Chemical Engineering Summer School, Washington State University.

58. A. R. Minerick, **J. M. Keith**, and D. P. Visco, "Tips for New Faculty: Engaging Your Graduate Students in Independent Thought," 2007 ASEE Annual Meeting, Honolulu, HI.

57. **J. M. Keith** (speaker), F. A. Morrison, and J. A. King, "Finite Element Method for Fuel Cell Fundamentals in the Undergraduate Transport Courses," 2007 ASEE Annual Meeting, Honolulu, HI.

56. R. A. Hauser (speaker), J. A. King, **J. M. Keith**, R. L. Barton, and M. G. Miller, "Thermal and Electrical Conductivity of Carbon/Liquid Crystal Polymer Composites For Fuel Cell Bipolar Plates," Society of Plastics Engineers Annual Technical Conference Proceedings, 2007, Cincinnati, OH.

55. J. Meldrum (speaker), **J. M. Keith**, and K. L. Reynolds, "Enhancement of Engineering Education Through University Competition-Based Events," 2006 SAE Small Engine Technology Conference & Exposition, San Antonio, TX

54. A. M. Tomson (speaker), **J. M. Keith**, J. A. King, and M. G. Miller, "Thermal Conductivity of Carbon Fiber / Liquid Crystal Polymer Composites," 2006 AIChE Annual Meeting, San Francisco, CA.

53. E. Kunen (speaker), **J. M. Keith**, and J. A. King, "Rheology Modeling of Carbon Filled Liquid Crystal Polymer Composites," 2006 NSF REU Student Poster Presentation, Houghton, MI.

52. K. C. Opella (speaker) and **J. M. Keith**, "Simulation of One-pass Dimethyl Ether Production from Natural Gas for Potential Use in a NG/DME Dual-fuel CI Engine," SAE Paper 2006-01-3358, 2006 Society of Automotive Engineers Powertrain and Fluid Systems Conference & Exhibition, Toronto, CA.

51. R, L. Barton (speaker), **J. M. Keith,** and J. A. King, "Development and Modeling of

Electrically Conductive Carbon Filled Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plate Applications," 2006 New Materials for Electrochemical Systems 6th International Symposium, Montreal, Canada.

50. J. A. King (speaker), **J. M. Keith,** and E. Steigerwalt, "GOALI: Development and Modeling of Highly Conductive Carbon Filled Thermoplastic Resins for Fuel Cell Bipolar Plate Applications," 2006 NSF DMI Grantees Conference, St. Louis, MO.

49. **J. M. Keith** (speaker), "Assistant Professorhood: Your Very Own Startup Company," 2006 ASEE Annual Meeting, Chicago, IL.

48. **J. M. Keith** (speaker), K. C. Opella, M. G. Miller, J. A. King, G. D. Gwaltney, C. A. Green, J. S. Meldrum, and S. A. Bradley, "Engineering Education in Alternative Energy," 2006 ASEE Annual Meeting, Chicago, IL.

47. R. Barton (speaker), **J. M. Keith**, and J. A. King, "Development of Electrically Conductive Models with Respect to the Transition to a Hydrogen Economy and Public Policy," National Science Foundation IGERT Project Meeting, 2006, Arlington, VA.

46. M. G. Miller, **J. M. Keith**, and J. A. King, "Graphite-Filled Liquid Crystal Polymer Composites for Fuel Cell Bipolar Plates," 2005 AIChE Annual Meeting, Cincinnati, OH.

45. **J. M. Keith**, "The Transport Cup," 2005 AIChE Annual Meeting, Cincinnati, OH.

44. N. Klinkenberg (speaker), J. A. King, and **J. M. Keith**, "Thermally Conductive Resins for Fuel Cell Applications," 2005 NSF REU Student Poster Presentation, Houghton, MI.

43. A. Minerick and **J. M. Keith**, "Culture Shock: Acclimating as a New Faculty Member," 2005 ASEE Annual Meeting, Portland, OR.

42. **J. M. Keith**, "The Stanley Cup of Transport Phenomena," 2005 ASEE Annual Meeting, Portland, OR.

41. J. A. King (speaker), **J. M. Keith,** and R. Hauser, "GOALI: Development and Modeling of Highly Conductive Carbon Filled Thermoplastic Resins for Fuel Cell Bipolar Plate Applications," 2005, Dana Corporation, Paris, TN.

40. J. G. Jelsma (speaker) and **J. M. Keith,** "The Fuel Cell Mule: An Alternative Fuels Multidisciplinary Undergraduate Research Project at Michigan Technological University," 2004 AIChE Annual Meeting, Austin, TX.

39. K. Opella, **J. M. Keith** (speaker), and D. Horstman "On-Site Dimethyl Ether Pilot Plant for Large Bore Stationary Natural Gas Engines," 2004 AIChE Annual Meeting, Austin, TX.

38. H. Zheng and **J. M. Keith** (speaker), "Factors Influencing Diesel Particulate Trap Regeneration," 2004 AIChE Annual Meeting, Austin, TX.

37. **J. M. Keith** (speaker), "The Alternative Fuels and Fuel Cell Enterprise," 2004 AIChE Annual Meeting, Austin, TX.

36. A. R. Minerick (invited speaker) and **J. M. Keith**, "Culture Shock: Acclimating as a

University Faculty Member," 2004, Chemical Engineering Seminar at Tennessee Technological University, Cookeville, TN.

35. **J. M. Keith** (speaker) "A Student-Driven Enterprise in Fuel Cells and Alternative Fuels," ASEE Conference Proceedings, 2004 ASEE Annual Meeting, Salt Lake City, UT.

34. **J. M. Keith** (speaker), "Teaching vs. Research: Perspectives from a 4th Year Assistant Professor," 2004 ASEE Annual Meeting, Salt Lake City, UT.

33. K. Opella and **J. M. Keith** (speaker), "Pilot Plant for DME Production for a Dual-Fuel Compression Ignition Engine," 2004, 2nd Annual DOE / ARES Peer Review Meeting, Argonne National Lab, Argonne, IL.

32. **J. M. Keith** (speaker) and S. L. Post, "Ignition Improvement of Lean Natural Gas Mixtures," 2004, 2nd Annual DOE / ARES Peer Review Meeting, Argonne National Lab, Argonne, IL.

31. H. Zheng (speaker) and **J. M. Keith**, "Ignition Analysis of Diesel Particulate Filters," 2003 AIChE Annual Meeting, San Francisco, CA.

30. K. Opella (speaker) and **J. M. Keith**, "Simulation of an On-Site, One Pass, Natural Gas to Liquified DME Production Process for a Dual-Fuel Compression Ignition Engine," 2003 AIChE Annual Meeting, San Francisco, CA.

29. H. Zheng and **J. M. Keith** (speaker), "JAVA Applets for Heat & Mass Transfer," 2003 AIChE Annual Meeting, San Francisco, CA.

28. H. Zheng (speaker) and **J. M. Keith**, "Web-Based Instructional Tools for Heat and Mass Transfer," 2003 Michigan Space Grant Awardees Conference, Ann Arbor, MI

27. G. Hein, K. Torrey, J. Hertl, D. Oppliger, **J. M. Keith** (speaker), G. Archer, "Integrating Engineering Disciplines into a Common First Year Engineering Program," 2003 ASEE Annual Meeting, Nashville, TN.

26. H. Zheng and **J. M. Keith** (speaker), "Web-Based Instructional Tools for Heat and Mass Transfer," 2003 ASEE Annual Meeting, Nashville, TN.

25. D. Horstman (speaker), D. Abata, and **J. M. Keith**, "On-Site DME Generation for Pilot Injection in CI Engines," SAE Paper 2003-01-3198, Society for Automotive Engineers Powertrain & Fluid Systems Conference & Exhibition, 2003, Pittsburgh, PA.

24. H. Zheng and **J. M. Keith** (speaker), "Diesel Particulate Filters: Theory and Modeling," 2002 AIChE Annual Meeting, Indianapolis, IN.

23. G. V. Pendse (speaker) and **J. M. Keith**, "A New Model to Describe Swelling in Polymeric Drug Delivery Systems," 2002 AIChE Annual Meeting, Indianapolis, IN.

22. G. V. Pendse (speaker) and **J. M. Keith**, "A Novel Design of a Diffusive System for Controlled Drug Delivery," 2002 AIChE Annual Meeting, Indianapolis, IN.

21. G. V. Pendse (speaker) and **J. M. Keith**, "A New Model to Simulate Drug Delivery by Erosion from Shapes of Irregular Geometry," 2002 AIChE Annual Meeting, Indianapolis, IN.

20. H. Zheng (speaker) and **J. M. Keith**, “A New Design for Efficient Diesel Particulate Trap Regeneration,” 2002 AIChE Annual Meeting, Indianapolis, IN.

19. L. Deng (speaker), **J. M. Keith**, D. Abata, and K. Schulz, “Reducing Diesel Engine Emissions at Low Temperatures,” 2002 AIChE Annual Meeting, Indianapolis, IN.

18. D. Horstman (speaker), D. Abata, **J. M. Keith**, and L. J. Oberto, “Feasibility Study of an On-Board Natural Gas to DME Reactor for DME Pre-Injection and Enhanced Ignition,” 2002 ASME – ICE (Internal Combustion Engines) Fall Conference, New Orleans, LA.

17. **J. M. Keith** (speaker), “Controlling Diesel Emissions,” 2002, 3M Center, St. Paul, MN.

16. **J. M. Keith** (speaker), “Fundamentals of Drug Delivery Systems,” 2002, 3M Center, St. Paul, MN.

15. S. Clancey (speaker), **J. M. Keith**, and A. Pintar, “Improving the Chemical Engineering Curriculum through Assessment: Student, Faculty, Staff, Alumni, and Industry Input,” 2002 ASEE Annual Meeting, Montreal, Canada.

14. **J. M. Keith** (speaker), “Learning Outside the Toybox,” 2002 ASEE Annual Meeting, Montreal, Canada.

13. H. Zheng (speaker) and **J. M. Keith**, “A New Design for Diesel Particulate Filters,” 2001 AIChE Annual Meeting, Reno, NV.

12. L. Deng (speaker), **J. M. Keith**, D. Abata, and K. Schulz, “Low Temperature Diesel Emissions Catalysis,” 2001 AIChE Annual Meeting, Reno, NV.

11. **J. M. Keith** (speaker), D. Wallaker, and N. Folcik, “The Impact of Transient Thermal Dispersion on Byproduct Minimization,” 2001 AIChE Annual Meeting, Reno, NV.

10. H. Zheng (speaker) and **J. M. Keith**, “Diesel Exhaust Particulate Trap Bypassing System,” 2001, Symposium in Chemistry and Related Fields, Upper Peninsula Section of the American Chemical Society, Michigan Technological University, Houghton, MI.

9. L. Deng (speaker), K. H. Schulz, D. Abata, and **J. M. Keith**, “A Catalytic Approach to Diesel Engine Emissions Control,” 2001, Symposium in Chemistry and Related Fields, Upper Peninsula Section of the American Chemical Society, Michigan Technological University, Houghton, MI.

8. **J. M. Keith** (speaker), C. Dugar, J. Meyer, and N. Norman, "A Hands-On Multidisciplinary Design Course for Chemical Engineering Students," 2001 ASEE Annual Meeting, Albuquerque, NM.

7. **J. M. Keith** (speaker), "A Design of a Controllable Reverse-Flow Reactor with Multiscale Transient Thermal Dispersion," 2000 AIChE Annual Meeting, Los Angeles, CA.

6. **J. M. Keith** (speaker), H.-C. Chang, D. T. Leighton, and E. Sherer, "A Novel Catalytic Converter Re-Design for Rapid Ignition," 1999 AIChE Annual Meeting, Dallas, TX.

5. **J. M. Keith** (speaker), "Novel Reactor Designs for Pollution Prevention," 1999 University of

Notre Dame Department of Chemical Engineering Graduate Seminar Series, University of Notre Dame, Notre Dame, IN.

4. **J. M. Keith**, D. T. Leighton, and H.-C. Chang (speaker), "A High Dispersion Design of Reverse-Flow Packed Bed Reactors," 1997, 2nd Joint US/China Chemical Engineering Conference, Beijing, China.

3. **J. M. Keith** (speaker), D. T. Leighton, and H.-C. Chang, "A New High Dispersion Design of Reverse-Flow Packed Bed Reactors for Volatile Organic Compounds," 1996 AIChE Annual Meeting, Chicago, IL.

2. **J. M. Keith** (speaker), "The Measurement of Soret Diffusion Effects in a Microgravity Environment," 1995 AIChE Regional Student Conference, Madison, WI.

1. W. A. Arnold, D. H. Mattheisen, and **J. M. Keith** (speaker), "Numerical Simulation of Soret Diffusion Effects Using a Shear Cell," 1995 AIAA Annual Conference, Reno, NV.

Consulting:

- Infrared Telemetrics, Hancock, MI, 2004 (consulted to analyze dynamical systems)
- Chemical Engineering Education, Gainesville, FL, 2004 (consulted to develop article format for ChE Software section)
- 3M Pharmaceuticals Division, St. Paul, MN, 2003-2006 (consulted to analyze drug permeation in skin)

Educational Materials:

1. Fundamentals of Chemical Engineering Laboratory Manual, Jaya Yaddanapudi, David Caspary, Nam Kim, and **Jason Keith**

Undergraduate / other graduate students supervised:

Mr. Gideon Mabeny, graduate (advised on developing collection of on-line resources in engineering education)
Mr. Shamim Howlader, graduate (advised on developing laboratory manual and set up of new laboratory equipment in CHE department)
Mr. Niraj Paluse, undergraduate (class of 2015)
Ms. Liz Rayfield, undergraduate (class of 2015)
Mr. Nick Schroeder, undergraduate (class of 2014)
Ms. Beth Pierce, undergraduate (class of 2011)
Mr. Rob Snay, undergraduate (class of 2011)
Ms. Neelima Borate, graduate (advised on development of fuel cell modules for internal combustion engine mechanical engineering courses, co-advised with Jeff Naber)
Mr. Nate Kroodsma, graduate (advised on development of fuel cell modules for metal forming and failure of materials mechanical engineering courses, co-advised with Dennis Meng)
Mr. Zach Edel, graduate (advised on development of fuel cell modules for fluid mechanics and heat transfer mechanical engineering courses, co-advised with Abhijit Mukherjee)
Mr. Riley Fair, undergraduate (class of 2013)
Mr. Andy McCollum, undergraduate (class of 2012)
Ms. Mary Jubinski, undergraduate (class of 2012, joint with Julia King, CM)
Ms. Na Mo, undergraduate (class of 2012, joint with Julia King, CM)

Mr. Martin Hermus, chemistry exchange student from ITMC, RWTH Aachen University (2009)
Ms. Kelsey Sprenger, undergraduate (class of 2010)
Mr. Jeff Schriks, undergraduate (class of 2008 joint with Julia King, CM)
Mr. Sam Roache, undergraduate (class of 2009, joint with Julia King, CM)
Ms. Jennifer Holdren, undergraduate (class of 2009, joint with Julia King, CM)
Mr. Aaron Wendzel, undergraduate (class of 2008)
Mr. Scott McLaughlin, undergraduate (class of 2008, joint with Julia King, CM)
Mr. Matthew Maycroft, undergraduate (class of 2009, joint with Julia King, CM)
Ms. Bridget Zimny, undergraduate (class of 2007, joint with Julia King, CM)
Ms. Kara Lenhart, undergraduate (class of 2007, joint with Julia King, CM)
Mr. Troy Tambling, undergraduate (class of 2007, joint with Julia King, CM)
Mr. Peter Grant, undergraduate (class of 2008, joint with Julia King, CM)
Mr. Andy Cole, undergraduate (class of 2008, joint with Julia King, CM)
Mr. Bryan Klett, undergraduate (class of 2007, joint with Julia King, CM)
Ms. Amanda Tomson, undergraduate (class of 2007, joint with Julia King, CM)
Ms. Emily Kunen, undergraduate (Brown University)
Ms. Joan Wierzba, undergraduate (class of 2007, joint with Julia King, CM)
Mr. Matt Hedlund, undergraduate (class of 2008, joint with Julia King, CM)
Mr. Ryan Smith, undergraduate (class of 2007, joint with Julia King, CM)
Mr. Nils Klinkenberg, REU undergraduate (U. of Rochester, joint with Julia King, CM)
Ms. Marianna Cruz, summer internship (U. Puerto Rico – Mayaguez, joint with Julia King, CM)
Mr. Carl Hingst, undergraduate (class of 2006)
Mr. Jeff Rudd, undergraduate (class of 2005)
Mr. Zack Gay, undergraduate (class of 2005)
Mr. Mike Shaffer, undergraduate (class of 2005)
Mr. Nick Kozenka, undergraduate (class of 2005)
Ms. Rebecca Hauser, undergraduate (class of 2005, joint with Julia King, CM)
Mr. Steve Veenman, undergraduate (class of 2003)
Mr. Luke Simoni, undergraduate (class of 2003)
Ms. Ami Peplinski, undergraduate (class of 2002)
Ms. Kim King, undergraduate (class of 2003, joint with Julia King, CM)
Mr. Thomas Prausa, undergraduate (class of 2003)
Mr. Chan Benton, undergraduate (class of 2003)
Mr. Arvind Peehal, M. S. Program (class of 2004)
Mr. Matt Devitt, undergraduate (class of 2002)
Mr. Doug Wallaker, undergraduate (class of 2002)
Mr. Neil Folcik, undergraduate (class of 2002)
Mr. Roy Scicluna, undergraduate (class of 2002)
Ms. Wen Nee Yeo, undergraduate (class of 2002, joint with Tomas Co, CM)

Doctoral Committees served on at Mississippi State University:

- Prashanth Buchireddy, Dave C. Swalm School of Chemical Engineering, “Biomass Gasification: Catalytic Steam Reforming of Tars using Nickel Supported Zeolites and Montmorillonite,” April 2013.

Doctoral Committees served on at Michigan Technological University:

- Harsha Shankar Surenahalli, "Department of Mechanical Engineering – Engineering Mechanics, “Dynamic Model Based State Estimation in a Heavy Duty Diesel Aftertreatment System for Onboard Diagnostics and Controls,” July 2013.
- Xiaobo Song, Department of Mechanical Engineering – Engineering Mechanics,“A SCR Model Based on Reactor and Engine Experimental Studies for a Cu-Zeolite Catalyst,”

July 2013.

- Jiqing Fan, Department of Chemical Engineering, "Sustainable Biofuels Production in the Upper Peninsula of Michigan: Life Cycle Assessments of Biofuels and Bioenergy"
- Le Xin, Department of Chemical Engineering, "Non-Pt Multi-Metallic Catalytic Systems for Cogeneration of Electricity and Chemicals from Biomass-Derived Alcohols Based on Solid Anion Exchange Membrane Fuel Cells"
- Zachary Edel, Department of Mechanical Engineering – Engineering Mechanics, "Investigation of Nonofluid Flow Boiling in a Microchannel"
- Michael Brodeur-Campbell, Department of Chemical Engineering, "Cellulosic Ethanol"
- Kaela Leonard, Department of Chemical Engineering, "Alternating Current Dielectrophoretic Manipulation of Erythrocytes and its Application in Medical Microdevice Technology," August 2012.
- Aytug Gencoglu, Department of Chemical Engineering, "Effects of Ion-Limiting Conditions on the Behavior of Microfluidic Devices," August 2012.
- Zhiyong Zhang, Department of Chemical Engineering, "Advanced Nanostructured Electro-Catalysts for Electricity Generation and Biorenewable Alcohol Conversion," August 2012.
- Michael D. Via, Department of Chemical Engineering, "Investigation into the Enhancement of Polycarbonate with Conductive Nanomaterials," May 2012.
- David L. Fritz, Department of Mechanical Engineering – Engineering Mechanics, "Wetting Effects on Local Evaporation Models for Improved Water Management in PEM Fuel Cells"
- Wen Nee Yeo, Department of Chemical Engineering, "Development and Testing of an Asymmetric Capacitor with a Nickel-Carbon Foam Positive Electrode," November 2011.
- Ezequiel F. Medici, Department of Mechanical Engineering – Engineering Mechanics, "Water Transport in Complex, Non-Wetting Porous Layers with Applications to water Management in Low Temperature Fuel Cells," August 2010.
- Jill Jensen, Department of Chemical Engineering, "Cellulosic Ethanol: Optimization of Dilute Acid and Enzymatic Hydrolysis Processing of Forest Resources and Switchgrass," November 2009.
- Mike Latusek, Department of Chemical Engineering, "Directed Synthesis and Characterization of a Supported Bimetallic Overlayer Catalyst," December 2008.
- Kim Lewandowski, Department of Chemical Engineering, "Acid Resistant Binders for Use in Copper Heap Leaching," May 2008.
- Maruthi Devarakonda, Department of Mechanical Engineering – Engineering Mechanics, "Dynamic Modeling, Simulation, and Development of Model-Based Control Strategies in a Urea-SCR Aftertreatment System in Heavy-Duty Diesel Engines," January 2008.
- Anna Siemionko, Department of Chemical Engineering, "Design, Fabrication, and Operation of a System to Control FC-72 Refrigerant Condensation," May 2006.
- Antonio Triana Padilla, Department of Mechanical Engineering – Engineering Mechanics, "Development of Models to Study the Emissions, Flow, and Kinetic Characterization from Diesel Oxidation Catalysts and Particulate Filters," December 2004.
- Jayashankar Yaddanapudi, Department of Chemical Engineering, "Identification and Control of Non-Minimum Phase Unstable Processes," December 2004.
- Paul Rogers, Department of Mechanical Engineering – Engineering Mechanics, "Evaluation of Loop Heat Pipe Performance for Ground Vehicle Applications," October 2004.

M.S.Committees served on at Mississippi State University:

- Anandi Varadarajan, Dave C. Swalm School of Chemical Engineering, “Impacts of feedstock bark addition and centrifugal filtration on pyrolysis oil properties and storage stability,” October 2014.
- Bobby McComas, Dave C. Swalm School of Chemical Engineering, “Preliminary Investigation Of Cellular Lipid Extraction Using Electroporation As An Enhancement Technique,” March 2013.

M.S. Committees served on at Michigan Technological University:

- Ken Shiel, Department of Mechanical Engineering – Engineering Mechanics, “Biodiesel Blended Fuels and Horsepower Rating Effect on Passive Oxidation in a Catalyzed Particulate Filter,” April 2012.
- Aamod Pethe, Department of Mechanical Engineering – Engineering Mechanics, “Dynamic Modeling of Active Regeneration in Catalyzed and Non-Catalyzed Diesel Particulate Filters,” June 2011.
- Brett Spigarelli, Department of Chemical Engineering, “An Approach to Carbon Dioxide Capture and Storage at Ambient Conditions,” May 2011.
- Neelima Borate, Department of Mechanical Engineering – Engineering Mechanics, “Parameter Identification of a Copper-Zeolite SCR Catalyst Model Using Reactor Data,” April 2011.
- Rasika Gawde, Department of Civil and Environmental Engineering, “Modeling Particulate Organic Matter Diagenesis with SED2K,” April 2011.
- Christopher Hutton, Department of Mechanical Engineering – Engineering Mechanics, “An Experimental Investigation Into the Passive Oxidation of Particulate Matter in a Catalyzed Particulate Filter,” December 2010.
- Seth DeLand, Department of Mechanical Engineering – Engineering Mechanics, “Development and Parameter Identification of an Iron Zeolite SCR Catalyst Model,” December 2010.
- Tayloria Adams, Department of Chemical Engineering, “In Plane Thermal Conductivity Modeling of Carbon Filled Liquid Crystal Polymer Based Resins,” November 2010.
- Gregory T. Austin, Department of Mechanical Engineering – Engineering Mechanics, “Effects of Biodiesel Blends on Particulate Matter Oxidation in a Catalyzed Particulate Filter During Active Regeneration,” May 2010.
- Harsha Shankar Surenahalli, "Department of Mechanical Engineering – Engineering Mechanics, “A Modeling Study of a Diesel Oxidation Catalyst and Catalyzed Particulate Filter During Loading and Active Regeneration,” April 2010.
- Travis Hansen, Department of Chemical Engineering, “Estimation of the Flammability Zone Boundaries with Thermodynamic and Empirical Equations,” April 2009.
- Beth Johnson, Department of Chemical Engineering, “Thermally and Electrically Conductive Polypropylene Based Resins for Fuel Cell Bipolar Plates”, February 2009.
- Abhijit (no last name), Department of Mechanical Engineering – Engineering Mechanics, “Ionization Signal Characteristics as a Feedback Signal for Spark Ignited Engines,” July 2008.
- Sheng Han Tseng, Department of Mechanical Engineering-Engineering Mechanics, “Fluidic Oscillator Design for Water Removal Enhancement in a PEM Fuel Cell,” December 2006.
- Shu Chiang Yat, Department of Chemical Engineering, “Wood Pretreatment Optimization: Determining the Reaction Kinetics of Hemicellulose Degradation to Soluble Sugars,” December 2006.
- Kim Lewandowski, Department of Chemical Engineering, “Agglomeration for Improved

Performance in Sulfide Heap Leaching," November 2006.

- Cho Hui Lim, Department of Chemical Engineering, "The Effect of Processing Temperature and Fiber Orientation on the Fracture Toughness and Nanomechanical Properties of Self-Reinforced Composite Poly(L-Lactic) Acid (SRC-PLLA)," April 2006.
- Robert Stocker, Department of Department of Mechanical Engineering – Engineering Mechanics, "Experimental Study of Direct Injection Fuel Sprays Under HCCI Conditions," December 2005.
- Gary J. Gorsalitz, Department of Mechanical Engineering – Engineering Mechanics, "A Feasibility Analysis on Utilizing an Existing Environmental Chamber Laboratory for Freezing Studies Relating to Water Management in PEM Fuel Cells," April 2005.
- Nathan Pawlak, Department of Chemical Engineering, "Oxidation Potential for the Determination of Inhibition of *acidithiobacillus ferrooxidans* in Continuous Culture," January 2005.
- Carrie Majkrzak, Department of Chemical Engineering, "The Effect of Processing Conditions on the Mechanical and Nano Mechanical Properties of Self Reinforced High Molecular Weight Polyethylene," August 2004.
- Nishant Singh, Department of Mechanical Engineering – Engineering Mechanics, "Development of a Vehicle Engine Aftertreatment System Simulation (VEASS) Model with Application to the Study of a Controls Design Strategy for Active Regeneration of a Catalyzed Particulate Filter," January 2004.
- Thomas Merritt III, Department of Chemical Engineering, "Flame Speed Determination Modeling for Methane and Ethylene Gaseous Mixtures," December 2003.
- Arvind Peehal, Department of Mechanical Engineering – Engineering Mechanics, coursework thesis & defense committee, November 2003.
- Renu Chandrasekaran, Department of Chemical Engineering, "Microfiltration of Skim Milk to Optimize Process Conditions to Achieve a Desired Casein to Fat Ratio," July 2003.
- Jessica Heiser, Department of Chemical Engineering, "Conductive, Shielding, Tensile, and Impact Properties of Carbon-Filled Nylon 6,6 Based Resins," July 2003.
- Amod Nadgouda, Department of Mechanical Engineering – Engineering Mechanics, "Calibration and Parametric Studies of a 1-D Filter Model To Study The Performance Characteristics of Diesel Particulate Filters," May 2003.
- Wen Nee Yeo, Department of Chemical Engineering, "Electrochemical Applications of Carbon Foam Electrodes," May 2003.
- Quinton Krueger, Department of Chemical Engineering, "Electromagnetic Interference and Radio Frequency Interference Shielding of Carbon-Filled Conductive Resins," May 2002.
- Geoffrey Roelant, Department of Chemical Engineering, "Life-Cycle Environmental and Economic Evaluation of Waste Energy Recovery Options During Automotive Paint Operations," October 2001.
- Radhika Cherukuru, Department of Mechanical Engineering-Engineering Mechanics, "Experimental Study of NOx Reduction From SI Natural Gas Engine with DME as a Combustion Optimizer," August 2001.
- Romulo Almeida, Department of Chemical Engineering, "The Effects of Polymer Substrate Surface Modification on Indium Tin Oxide Thin Film Properties," July 2001.
- John Vande Kemp, Department of Mechanical Engineering-Engineering Mechanics, "Reduced Temperature Nozzle Spray Penetration Comparison of a Distributor Style Diesel Injection System," May 2001.

Supplemental Information on Professional Service:

Other Service to Mississippi State University:

- Director of the Office of Technology Management Search Committee, 2014-2015
- Associate Vice President for Research Search Committee, 2013
- Think Big! Proposal Review Committee, Bagley College of Engineering, 2013
- Undergraduate Admissions Policy Committee, 2012-2015
- Bagley College of Engineering Endowed Chair Evaluation Committee, 2012
- Associate Department Heads Committee, 2012
- Water Research Planning Committee, 2012
- State Pride and Hearin Faculty Excellence Award review committee, 2011
- Engineering Administrative Council, 2011-2012
- MSU Foundation Campaign Planning Group, 2011

Other Service to Michigan Technological University:

- Bhatka Rath Research Award Review Committee, 2011
- Library Designee, Department of Chemical Engineering, 2011
- Poster Judge, Department Engineering Fundamentals, 2010
- Graduate Dean's Advisory Panel, College of Engineering Representative, 2010-2011
- Chair, Department Computer Committee, 2010-2011
- Department Curriculum Committee, 2010-2011
- Department Adjunct Faculty Review Committee, 2010-2011
- Bin and Cognate Reviewer, Strategic Faculty Hiring Initiative (SFHI) in Energy and Health, 2009-2010
- Chair, Grain Processing Corporation Seminar Series (2009-2010)
- Chair, Department Graduate Committee (2009-2010)
- Summer Undergraduate Proposal Reviewer, 2009
- University Energy Advisory Committee, (2008-2009)
- Chrysler Fellowship Review Committee, 2008
- University Systems Portfolio for Accreditation Committee (2008-2009)
- Poster Judge, Department Engineering Fundamentals (2008)
- Chair, Grain Processing Corporation Seminar Series (2008-2009)
- University Senate, Chemical Engineering Representative (2007-2008)
- Chair, Grain Processing Corporation Seminar Series (2007-2008)
- Department Graduate Committee (2007-2008)
- University Senate Executive Committee (2007-2008)
- Chair, University Senate Elections Committee (2007-2008)
- Chair, Sustainability Strategic Faculty Hiring Initiative Marketing / Communications Subcommittee (2007-2008) (Developed website: http://www.mtu.edu/sfhi/)
- Sustainability Strategic Faculty Hiring Initiative Committee (2007-2008)
- Sustainable Futures Institute Steering Committee (2007-2008)
- IGERT Professional Development / Orientation Committee (2007)
- Graduate Tuition Committee (2007)
- Chair, Department Graduate Committee (2006-2007)
- Department Graduate Committee (2005-2006)
- Department Strategic Planning Committee (2005-2006)
- Department Graduate Committee (2004-2005)
- Department Space and Safety Committee (2004-2005)

- Department Sigel Lecture Series Coordinator (2003-2004)
- MTU Graduate Faculty Council (2003-2004)
- MTU Recruiting and Graduation Committee (sub-committee of MTU Graduate Faculty Council) (2003-2004)
- MTU Review of the Proposed MS Spinoff Programs in the School of Forest Resources and Environmental Science, (2004)
- Chair, Department Graduate Committee (2003-2004)
- Department Graduate Committee (2002-2003)
- MTU Graduate Faculty Council, Michigan Technological University (2002-2003)
- Department Space and Safety Committee (2002-2003)
- Faculty Advisor, American Institute of Chemical Engineers Student Chapter (2002-2007)
- Faculty Advisor, Alternative Fuels Group (MTU Enterprise) (2002-2011)
- Abstract Evaluator, Graduate Student Council 2002 Poster Competition
- Department Executive Committee (2001-2002)
- Department Alternate Representative to MTU Senate (2001-2002)
- Department Chair Search Committee (2000-2001)
- Department Assessment Committee (2000-2001)

Other External Service:

- Abstract and Paper Reviewer, American Society for Engineering Education, 2023
- Abstract and Paper Reviewer, American Society for Engineering Education, 2022
- External referee on promotion appointment, 2021
- External referee on promotion appointment, 2021
- Abstract and Paper Reviewer, American Society for Engineering Education, 2021
- External referee on promotion appointment, 2019
- Abstract and Paper Reviewer, American Society for Engineering Education, 2020
- External referee on promotion appointment, 2018
- Abstract and Paper Reviewer, American Society for Engineering Education, 2019
- Abstract and Paper Reviewer, American Society for Engineering Education, 2017
- External referee on promotion appointment, 2015
- External referee on tenure appointment, 2015
- Abstract and Paper Reviewer, American Society for Engineering Education, 2015
- External referee on promotion appointment, 2015
- External referee on tenure appointment, 2014
- Paper Reviewer, Chemical Engineering Education, 2014
- External referee on promotion and tenure application, 2014
- Paper Reviewer, Chemical Engineering Education, 2013
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2013, San Francisco, CA. “Memorial Session for Don Woods,” Session Vice Chair: Santiago Faucher, Hatch Corporation
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2013, San Francisco, CA. “Computing and Technology in Education,” Session Vice Chair: Professor Allen Hersel, Trine University
- Moderator, American Society for Engineering Education 2013 Annual Meeting, June 2013, Atlanta, GA, “Chemical Engineering Division Lectureship Award”
- Paper Reviewer, Chemical Engineering Communications, 2013
- Paper Reviewer, Chemical Engineering Education, 2013
- External referee on promotion and tenure application, 2013

- Abstract and Paper Reviewer, American Society for Engineering Education, 2013
- External referee on promotion and tenure application, 2013
- External referee on promotion and tenure application, 2013
- Abstract Reviewer, American Society for Engineering Education, 2012
- External referee on promotion and tenure application, 2012
- Paper Reviewer, Chemical Engineering Education, 2012
- External referee on promotion and tenure application, 2012
- Student Poster Contest Judge, Southeast Biofuels and Renewable Energy Conference, Jackson, MS, 2012
- Paper Reviewer, Chemical Engineering Journal, 2012
- Paper Reviewer, AIChE Journal, 2012
- Paper Reviewer, American Society for Engineering Education, 2012
- Proposal Reviewer, DOE Graduate Fellowship Program, 2012
- Paper Review, Biomass and Bioenergy, 2012
- Paper Review, Journal of Catalysis, 2012
- Proposal Reviewer, Department of Energy Office of Science Graduate Fellowship, 2012
- External referee on promotion and tenure application, 2011
- Paper Review, AIChE Journal, 2011
- External referee on promotion and tenure application, 2011
- Abstract Reviewer, American Society for Engineering Education, 2011
- External referee on promotion and tenure application, 2011
- Session Chair, American Institute of Chemical Engineers Annual Meeting, October 2011, Minneapolis, MN. "Software, Technology, and Computation in Chemical Engineering Education," Session Vice Chair: Professor Peyton Richmond, Lamar University
- Paper Reviewer, Journal of Applied Polymer Science, 2011
- Moderator, American Society for Engineering Education 2011 Annual Meeting, June 2011, Vancouver, BC, Canada, "Chemical Engineering Division Lectureship Award," co-moderator: Phil Wankat, Purdue University
- Moderator, American Society for Engineering Education 2011 Annual Meeting, June 2011, Vancouver, BC, Canada, "Poster Session for Tenure Track Faculty," co-moderators: Don Visco, The University of Akron, and Mike Prudich, Ohio University
- Paper Reviewer, Chemical Engineering Education, 2011
- Paper Reviewer, Carbon, 2011
- Paper Reviewer, Thermochimica Acta, 2011
- Paper Reviewer, Computer Applications in Chemical Engineering, 2011
- Abstract and Paper Reviewer, American Society for Engineering Education, 2010-2011
- Awards Committee, CACHE Corporation, 2010-2011
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2010, Salt Lake City, UT. "Modeling and Analysis of Chemical Reactors," Session Vice Chair: Professor Vemuri Balakotaiah, University of Houston
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2010, Salt Lake City, UT. "Engineering Education Poster Session," Session Vice Chair: Professor Suzanne Kresta, University of Alberta
- Paper Reviewer, Iraqi Journal of Applied Physics, 2010
- Paper Reviewer, Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automotive Engineering, 2010
- Moderator, American Society for Engineering Education 2010 Annual Meeting, June 2010, Louisville, KY, "Chemical Engineering Division Lectureship Award"

- Paper Reviewer, Chemical Engineering Education, 2010
- Paper Reviewer, AIChE Journal, 2010
- Paper Reviewer, Thermochimica Acta, 2010
- CACHE Liaison to the Chemical Engineering Summer School, 2010-2012
- Paper Reviewer, Fuel, 2010
- Paper Reviewer, ASME 2010 Fuel Cell Science, Engineering and Technology Conference
- Sponsorship Committee Chair, MTU Preschool, 2010
- Proposal Reviewer, Department of Energy Office of Science Graduate Fellowship, 2010
- Paper Reviewer, AIChE Journal, 2010
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2009
- Paper Reviewer, Journal of Applied Polymer Science, 2009
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2009
- Session Vice Chair, American Institute of Chemical Engineers Annual Meeting, November 2009, Nashville, TN. "Chemical Reactor Dynamics," Session Chair: Professor Vemuri Balakotaiah, University of Houston
- Session Vice Chair, American Institute of Chemical Engineers Annual Meeting, November 2009, Nashville, TN. "Chemical Engineering Modules," Session Chair: Professor Stephanie Farrell, Rowan University
- Abstract and Paper Reviewer, American Society for Engineering Education, 2009-2010
- Paper Reviewer (7 papers) for session at Society of Plastics Engineering ANTEC 2010 Conference, 2009
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2009
- Paper Reviewer, Journal of Applied Polymer Science, 2009
- External referee on promotion and tenure application, 2009-2010
- Moderator, American Society for Engineering Education 2009 Annual Meeting, June 2009, Pittsburgh, PA, "Chemical Engineering Division Lectureship Award"
- NSF Review Panel, Reaction Engineering, 2009.
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2009
- Proposal Reviewer, NASA Postdoctoral Program, 2008
- Paper Reviewer, AIChE Journal, 2008
- Paper Reviewer, Chemical Engineering Education, 2008
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2008, Philadelphia, PA. "Chemical Engineering Software Demonstrations"
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2008, Philadelphia, PA. "A Century of Transport Phenomena," part of the 100th Anniversary Topical Conference on Education
- Abstract and Paper Reviewer, American Society for Engineering Education, 2008-2009
- Paper Reviewer, Chemical Engineering Journal, 2008
- Paper Reviewer, ASME Journal of Fuel Cell Science and Technology, 2008
- Awards Co-Chair, Chemical Engineering Division, American Society for Engineering Education, 2008-2013
- Moderator, American Society for Engineering Education 2008 Annual Meeting, June 2008, Pittsburgh, PA, "Chemical Engineering Poster Session," co-moderator: Sundar Madihally, Oklahoma State University
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2008
- Paper Reviewer, AIChE Journal, 2008
- Paper Reviewer, Chemical Engineering Science, 2008

- Paper Reviewer, Chemical Engineering and Processing: Process Intensification, 2007
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2007, Salt Lake City, UT. "Chemical Engineering Software Demonstrations"
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2007, Salt Lake City, UT, "Chemical Reaction Dynamics," co-chair Vemuri Balakotaiah, University of Houston
- Proposal Reviewer, American Chemical Society Petroleum Research Fund, 2007
- Paper Reviewer, Chemical Engineering Journal, 2007
- Paper Reviewer, Proceedings of the Institution of Mechanical Engineers, Part D, Journal of Automobile Engineering, 2007
- Paper Reviewer, ASME Journal of Fuel Cell Science and Technology, 2007
- Awards Chair, New Engineering Educators Division, American Society for Engineering Education, 2007
- Martin Award Chair (Best Paper), Chemical Engineering Division, American Society for Engineering Education, 2007
- Moderator, American Society for Engineering Education 2007 Annual Meeting, June 2007, Honolulu, HI, "Tricks of the Trade in the Classroom II," co-moderator: Matt Cline, Carnegie Mellon University
- Moderator, American Society for Engineering Education 2007 Annual Meeting, June 2007, Honolulu, HI, "Chemical Engineering Poster Session," co-moderator: Randy Lewis, Brigham Young University
- Moderator, American Society for Engineering Education 2007 Annual Meeting, June 2007, Honolulu, HI, "Computing in the ChE Curriculum," co-moderator: Thomas Marlin, McMaster University
- Paper Reviewer, International Journal of Chemical Reactor Engineering, 2007
- Paper Reviewer, AIChE Journal, 2007
- Paper Reviewer, International Electronic Conference on Computer Science, 2007
- Paper Reviewer, Education for Chemical Engineers, 2007
- Paper Reviewer, Journal of New Materials for Electrochemical Systems, 2007
- Paper Reviewer, Materials Chemistry and Physics, 2007
- Paper Reviewer, Advances in Engineering Education, 2007
- Abstract and Paper Reviewer, American Society for Engineering Education, 2007 Annual Meeting
- Paper Reviewer, Biotechnology and Bioengineering, 2006
- Paper Reviewer, Chemical Engineering Education, 2006
- Paper Reviewer, Materials Research Bulletin, 2006
- Paper Reviewer, Chemical Engineering Journal, 2006
- Paper Reviewer, Education for Chemical Engineers, 2006
- ASEE New Engineering Educators Awards Committee, 2006
- Moderator, American Society for Engineering Education 2006 Annual Meeting, June 2006, Chicago, IL, "Effective & Efficient Teaching Skills." co-moderator: Alan Hershel, Tri-State University
- Moderator, American Society for Engineering Education 2006 Annual Meeting, June 2006, Chicago, IL, "ChE: Innovation in the Laboratory." co-moderator: Marina Miletic, University of Illinois, Urbana-Champaign
- Moderator, American Society for Engineering Education 2006 Annual Meeting, June 2006, Chicago, IL, "New Engineering Educators Business Meeting." co-moderator: Adrienne Minerick, Mississippi State University
- Moderator, American Society for Engineering Education 2006 Annual Meeting, June

2006, Chicago, IL, "New Engineering Educators Poster Session." co-moderators: Sharon Sauer, Rose-Hulman Institute of Technology and Don Visco, Tennessee Technological University

- Paper Reviewer, Composites Science and Technology, 2006
- NSF Review Panel, Thermal Energy SBIR, 2006.
- Proposal Reviewer, Louisiana Board of Regents, 2006
- Abstract and Paper Reviewer, American Society for Engineering Education, 2006 Annual Meeting
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2005, Cincinnati, OH. "Chemical Reactor Dynamics". Session Vice Chair: Professor Vemuri Balakotaiah, University of Houston
- Paper Reviewer, Biotechnology and Bioengineering, 2005
- Paper Reviewer, Applied Physics Letters, 2005
- Paper Reviewer, Applied Catalysis B, 2005
- Proposal Reviewer, American Chemical Society Petroleum Research Fund, 2005
- Paper Reviewer, AIChE Journal, 2005
- Paper Reviewer, Chemical Engineering Education, 2005
- Moderator, American Society for Engineering Education 2005 Annual Meeting, June 2005, Portland, OR: "New Engineering Educators Business Meeting"
- Moderator, American Society for Engineering Education 2005 Annual Meeting, June 2005, Portland, OR: "NSF Funding for Educational Scholarship," co-moderator: Adrienne Minerick, Mississippi State University
- Moderator, American Society for Engineering Education 2005 Annual Meeting, June 2005, Portland, OR: "ChE Department and Faculty Issues"
- Proposal Reviewer, Natural Sciences and Engineering Research Council of Canada, 2005
- Proposal Reviewer, American Chemical Society Petroleum Research Fund, 2005
- Paper Reviewer, Encyclopedia of Chemical Processing, 2005
- Abstract and Paper Reviewer, American Society for Engineering Education, 2005 Annual Meeting
- Book Chapter Review, Unit Operations of Chemical Engineering, 7th Edition, 2004
- Paper Reviewer, AIChE Journal, 2004
- Paper Reviewer, Chemical Engineering Science, Special Proceedings Issue of the International Symposia on Chemical Reaction Engineering, 2004
- Proposal Reviewer, American Chemical Society Petroleum Research Fund, 2004
- Paper Reviewer, Catalysis Today, 2004
- Session Chair, American Institute of Chemical Engineers Annual Meeting, November 2004, Austin, TX. "Chemical Reactor Dynamics". Session Vice Chair: Professor Vemuri Balakotaiah, University of Houston
- Session Vice Chair, American Institute of Chemical Engineers Annual Meeting, November 2004, Austin, TX. "Engineering Education Showcase (Poster Session)". Session Chair: Professor Jeff Csernica, Bucknell University
- Moderator, American Society for Engineering Education 2004 Annual Meeting, June 2004, Salt Lake City, UT: "New Engineering Educators Get-Together Dinner"
- Moderator, American Society for Engineering Education 2004 Annual Meeting, June 2004, Salt Lake City, UT: "Tricks of the Trade: Inside the Class" Co-moderator: Professor Alan Nelson, University of Alberta
- Abstract and Paper Reviewer, American Society for Engineering Education, 2004 Annual Meeting
- American Society for Engineering Education, New Engineering Educators, Program

Vice-Chair, 2003-2004 (in preparation for 2004 ASEE Annual Meeting).

- Moderator, American Society for Engineering Education 2003 Annual Meeting, June 2003, Nashville, TN: "Tenure and Promotion Tricks of the Trade."
- Moderator, American Society for Engineering Education 2003 Annual Meeting, June 2003, Nashville, TN: "Novel Classes for ChE's." Co-moderator: Professor Roni Burrows, Arizona State University
- Guest Editor, *Catalysis Today*, 2003. Issue highlights papers from technical sessions at the 2002 AIChE Annual Meeting. co-editor: Professor Peter Smirniotis, University of Cincinnati
- Paper Reviewer, Industrial and Engineering Chemistry Research, 2003
- Paper Reviewer, American Society for Engineering Education, 2003 Annual Meeting
- Paper Reviewer, AIChE Journal, 2003
- Paper Reviewer, Journal of Environmental Technology, 2002
- Paper Reviewer, Chemical Engineering Science, 2002
- Session Vice Chair, American Institute of Chemical Engineers Annual Meeting, November 2002, Indianapolis, IN: "Environmental Catalysis and Reaction Engineering I". Session Chair: Professor Peter Smirniotis, University of Cincinnati
- Session Vice Chair, American Institute of Chemical Engineers Annual Meeting, November 2002, Indianapolis, IN: "Environmental Catalysis and Reaction Engineering II". Session Chair: Professor Peter Smirniotis, University of Cincinnati
- Moderator, American Society for Engineering Education 2002 Annual Meeting, June 2002, Montreal, CA: "Tricks of the Trade Inside the Classroom". Co-moderator: David Miller, Rose-Hulman Institute of Technology.
- Paper Reviewer, Journal of Heat Transfer, 2002
- NSF SBIR Phase II Proposal Review Panel, October 2001.
- Paper Reviewer, American Society for Engineering Education, 2001 Annual Meeting

Date of last edit: October 12, 2023