

**Jason M. Keith**

Dean and Earnest and Mary Ann Deavenport, Jr. Chair  
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**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
- 1<sup>st</sup> 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
- 2<sup>nd</sup> 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 available upon request.*

### **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 (available upon request):*
  - > 120 Technical Conference Presentations
  - 14 Invited Lectures
  - 4 Engineering Case Studies
  - 5 Engineering Textbook Problems
  - > 50 undergraduate / other graduate students supervised

#### **Refereed Journal Publications (\* indicates 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. Crawl 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](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. Kempainen, 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. **2<sup>nd</sup> 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 4<sup>th</sup> 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](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.

Funded Research and Faculty Development Proposals & Projects:

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 Crawl, 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%

Students receiving graduate degrees under my supervision:

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@SiO<sub>2</sub> 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 available upon request.*

Date of last edit: October 12, 2023