Hisham E. Hegab, Ph.D., P.E.

Louisiana Tech University
P.O. Box 10348
Ruston, LA 71272-0046
e-mail: hhegab@latech.edu
cell: (318)-278-9216
office: (318)-257-3791
FAX (318)-257-4922

PROFESSIONAL EXPERIENCE

Academic Director, *CS/EE/EET/NSE Programs, Louisiana Tech University*, 9/05-present
Program Chair, *Micro and Nanosystems Engineering*, *Louisiana Tech University*, 9/04-present
Associate Professor, *Mechanical Engineering, Louisiana Tech University*, 9/01-present
Assistant Professor, *Mechanical Engineering, Louisiana Tech University*, 8/95-9/01

- Appointed Academic Director of Electrical Engineering, Electrical Engineering Technology, Computer Science, & Nanosystems Engineering, July 2006 (served as Interim Director August 2005 – June 2006)
  Responsible for the following within these programs:
  - administration and management of four undergraduate and three graduate degree programs
  - direct supervision and evaluation of 21 faculty and 2 staff in Electrical Engineering, Electrical Engineering Technology, & Computer Science
  - management of tenure and promotion of faculty
  - recruiting and hiring of new faculty
  - budget management and approval
  - fostering interdisciplinary collaboration in research and curricula within the College
  - administration of ABET accreditation for all programs – supervision and management of faculty and program accreditation activities, primary editor of self-study reports, and principal point of contact for program evaluators – EE, EET, and CS programs reviewed in 2008-09AY
- Appointed Program Chair in Micro & Nanosystems Engineering, Fall 2004
  - Extensive work in the development of curriculum and courses related to micro and nanosystems engineering
  - Facilitated team of faculty that developed first Bachelor of Science program in Nanosystems Engineering in the U.S. and was appointed as its founding chair
  - Developed several courses within the curriculum – NSE 201 Fundamentals of Nanosystems Engineering, NSE 301 Nanosystems Engineering Research Seminar, NSE 303 Nanosystems Engineering Laboratory
  - Primary author of ABET accreditation report for program – seeking accreditation in 2010
- Promoted to Associate Professor and tenured in 2001
- Started as full-time, tenure-track assistant professor in Mechanical Engineering Program with associate appointment at the Institute for Micromanufacturing (IfM) in 1995
- Research expertise in design, analysis, and testing of fluid and thermal systems including micro heat exchangers, microfluidic systems and devices, and cryogenic fluids
- Primary research work has been in the area of micro heat exchangers and micro cooling systems
- Teaching experience includes courses in: thermodynamics, heat transfer, fluid mechanics, thermal systems design, HVAC design, electronic packaging, finite element analysis, numerical methods, instrumentation, measurements, microsystems engineering, and nanosystems engineering
- Served as advisor (thesis/dissertation chairman) to 12 masters graduates and 4 doctoral graduates
- Served on dozens of masters and doctoral graduates' committees

Mechanical Engineer, *LORAL Information Display Systems, Atlanta, GA,* 1/95 – 7/95

- Thermal analyst for electronic packaging of flat panel displays and backlights
- Evaluated component layout of printed circuit cards and analyzed system level cooling of displays
- Performed thermal/vibration testing of backlight systems

Consulting Engineer, *Healthdyne Technologies, Atlanta, GA,* 7/94 – 1/95

- Provided engineering design/testing of oxygen concentrators including thermal, noise/vibration, and energy analyses

Graduate Research/Teaching Assistant, *Georgia Institute of Technology*, 9/89 – 4/94

- Performed research in the modeling of mechanical seals using FEA analysis and finite difference techniques for a research project sponsored by John Crane, Inc.
- Research and testing of thermal management of outdoor electronic enclosures for a research project sponsored by Bell Northern Research
- Co-instructed undergraduate heat transfer class (delivered half of lectures)
- Supervised undergraduate computer thermal design laboratory, graded thermal design projects

EDUCATION

Ph.D.	Mechanical Engineering, Georgia Institute of Technology, 1994
M.S.	Mechanical Engineering, Georgia Institute of Technology, 1991
B.S.	Mechanical Engineering, Louisiana Tech University, 1989

GRANT/RESEARCH ACTIVITY (over $4M total funding as PI or co-PI)

- 2009-2010 – Enzyme Immobilization for Large Scale Reators to Reduce Cellulosic Ethanol Costs – Co-Principal Investigator – 1 year grant of $100,000 sponsored by DoE grant internally awarded by Louisiana Tech to continue study of scalable enzyme immobilization processes for cellulosic ethanol production.
- 2009-2010 – NASA Senior Project: Design of an Active Cooling Module – Principal Investigator – 1 year grant of $3,500 sponsored by NASA-LASpace Consortium to support a senior design project to design a prototype active cooling module for electronic packaging.
- 2008-2010 – TUNE: Teaching Undergraduates Nanomanufacturing Engineering – Co-Principal Investigator, 2-year grant of $200,000 funded by National Science Foundation – NUE Program – Development of nanomanufacturing lab course and survey of industrial workforce needs for nanotechnology companies.
- 2008-2009 – Enzyme Immobilization for Large Scale Reators to Reduce Cellulosic Ethanol Costs – Co-Principal Investigator – 1 year grant of $113,916 sponsored by DoE grant internally awarded by Louisiana Tech to study scalable enzyme immobilization processes for cellulosic ethanol production.
- 2008-2009 – Design of a Cryogenic Shell and Tube Heat Exchanger – Principal Investigator – 1 year grant of $4,000 sponsored by NASA-LASpace Consortium to support a senior design project to design a cryogenic heat exchanger for NASA-Stennis Space Center.
- 2006-2010 – Living WITH the Lab – Co-Principal Investigator, 4-year grant of $497,917 funded by National Science Foundation – CCLI Program – Phase 2 to implement a hands-on robotics-based curriculum in the freshman and sophomore engineering courses.
- 2007-2008 – Design of Heat Exchanger Testing Apparatus – 1 year grant of $7,500 sponsored by ASHRAE to support a senior design project.
- 2007-2008 – Thermal Control System for a Lunar/Mars Rover – 1 year grant $3,000 sponsored by NASA-LASPACE Consortium to support a senior design project to design a miniature loop heat pipe for a lunar rover.
- 2007-2008 – Particle Analyzer System for Nanosystems Engineering Program – 1-year grant of $66,280 from Louisiana Tech University Student Technology Fee Board to enhance the Micro and Nanosystems Engineering Laboratories.
- 2006-2007 – Enhancing Micro/Nanotechnology Education with Hands-on Scanning Electron Microscopy – Principal Investigator, 12-month grant of $60,630 to obtain a table top SEM for use in undergraduate laboratories funded by the Louisiana Board of Regents Support Fund.
- 2005-2006 – Enhancing Nanotechnology Education through Hands-on Atomic Force Microscopy – co-Principal Investigator, 12-month grant of $50,000 funded by Louisiana Board of Regents to provide AFM/STM system for undergraduate education.
- 2004-2005 – NUE: Teaching Nanosystems Engineering to Early College Students with Active Learning Experiences – Principal Investigator, 24-month grant of $100,000 to develop nanotechnology-related experiential learning activities targeting freshman and sophomore engineering students funded by National Science Foundation.

- 2003-04 – Establishing a Micro/Nanofabrication Teaching Laboratory – Principal Investigator, 12-month grant of $200,000 funded by Louisiana Tech Technology Fee Board and College of Engineering & Science to develop a MEMS laboratory for masters students in Microsystems Engineering.
- 2003-04 – Enhancing Manufacturing Education through Hands-on Rapid Prototyping – Principal Investigator, 12-month grant of $54,250 funded by the Louisiana Board of Regents to enhance mechanical engineering manufacturing laboratory through acquisition of CNC equipment, GD&T software, and RP technology.
- 2002 – 3D Laser Measurement and Digital Image Mapping for Pipeline Inspection – Center for Entrepreneurship and Information Technology, Louisiana Tech University, 12-month seed grant of $39,500 to develop imaging algorithms for sewer inspection technologies.
- 2002 – ENGR 489C: A Rapid Prototyping Tools Course – Center for Entrepreneurship and Information Technology, Louisiana Tech University, 6-month course development grant of $9,000 to provide a workshop on rapid prototyping technologies in the areas of 3D printing, CNC machining, and 3D scanning.
- 2001 – Thermal Design of a Collapsible Cryogenic Vessel – NASA ASEE Summer Faculty Fellowship, Kennedy Space Center.
- 2000-2001 – Integrated Classroom/Laboratory for Sophomore Engineering Science Courses – Principal Investigator, 12-month grant of $75,600 funded by the Louisiana Board of Regents Support Fund to establish a thermodynamics laboratory.
- 2000-2001 – Hands-on Learning in Undergraduate Fluid Mechanics – Co-Principal Investigator, 12-month grant of $49,000 funded by the Louisiana Board of Regents Support Fund to enhance the undergraduate fluid mechanics laboratory.
- 2000-2005 – One-Two-Three-Go: A Strategic Initiative for Rapid Research Competitiveness in Microsystems Development – Other Investigator, 5-year grant of $710,000 funded by the Louisiana Board of Regents Support Fund to enhance faculty hiring at the Institute for Micromanufacturing.
- 2000-2001 – Development of a High-Pressure, Low-Temperature RTD Sensor – Principal Investigator, 12-month grant of $40,000 funded by NASA Stennis Space Center to design and fabricate a prototype RTD sensor for high pressure liquid oxygen flows.
- 2000 – Thermal analysis of the NASA Integrated Vehicle Health Monitoring Experiments Technology for X-Vehicles – NASA ASEE Summer Faculty Fellowship, Kennedy Space Center.
- 1998-2001 – Development of Microminiature Refrigeration Systems – Principal Investigator, 3-year grant of $83,000 funded by the Louisiana Board of Regents Support Fund to design and fabricate microminiature cooling systems and investigate fluid flow and heat transfer characteristics in microchannels.
- 1996-2001 – Development of a Center for Advanced Mold/Mask Processes and Applications for the Miniaturization Technologies – Co-Investigator, 5-year grant of $1,994,500 funded by the Department of Defense (DoD) to establish a research center at the IfM specializing MEMS technologies.
- 1998-2000 – Multidisciplinary Equipment Enhancement Project – Co-Principal Investigator, 2-year grant of $300,000 funded by the National Science Foundation Major Research Instrumentation program. Provided funds to obtain PIV and LDV systems for flow visualization.

SCHOLARSHIP

Refereed Journal Articles/Book Chapters

1. Bellamkonda, R., John, T., Mathew, B., DeCoster, M., Hegab, H., Davis, D., Nanowire GMR based Microfluidic Biosensor, *Journal of Micromechanics and Microengineering*, vol. 20, no. 2, pp. 1-6, 2010.
2. Mathew, B. and H. Hegab, Application of Effectiveness-NTU Relationship to Parallel Flow Microchannel Heat Exchangers Subjected to External Heating, *International Journal Thermal Sciences*, vol. 49, no. 1, pp. 76-86, 2010.
3. Mathew, B. and H. Hegab, Performance Evaluation of Microchannel Counter Flow Heat Exchangers Subject to Constant External Heat Transfer, *Heat Transfer Engineering*, vol. 31, no. 3, pp. 168-178, 2010.
4. Hegab, H. and J. Palmer, "Development of a Nanosystems Undergraduate Engineering Degree," book chapter in Nanoscale Science and Engineering Education: Issues, Trends, and Future Directions, Sweeney, A.E and S. Seal editors, American Scientific Publishers, 2008.
5. Hegab, H., Bari, A., and T. Ameel, "Forced Convection Studies of R-134a in Microchannels," *Experimental Heat Transfer*, vol. 15, no. 4, pp. 245-259, 2002.
6. Hegab, H., Zimmerman, E., and G. Colwell, "Thermal Management of Outdoor Electronic Cabinets Using Soil Heat Exchangers," *Journal of Electronic Packaging*, vol. 124, no. 1, pp. 7-11, 2002.

7. Zimmerman, E., Hegab, H., and G. Colwell, "Prevention of Overheating and Frequent Cycling of Outdoor Electronic Cabinets Cooled by Forced Air Convection," *Journal of Electronic Packaging*, vol. 121, no. 1, 1999, pp. 50-54.
8. Hegab, H., Shen, B., Ameel, T., and W. Dai, "Four Layer Model of Heat Transfer in an X-ray Irradiated Resist-Substrate Wafer," *Numerical Heat Transfer Pt. A: Applications*, vol. 34, no. 8, 1998, pp. 805-819.
9. Zimmerman, E., Colwell, G., and H. Hegab, "Thermal Management of Electronic Enclosures," *Advances in Heat Pipe Technology*, Proceedings of the IX International Heat Pipe Conference, May 1-5, 1995, Albuquerque, New Mexico, vol. II, pp. 801-805, Los Alamos National Laboratory, LA-UR-97-1500, 1st Ed., Los Alamos, NM, 1997.
10. Hegab, H. and G. Colwell, "Thermal Performance of Heat Pipe Arrays in Soil," *Numerical Heat Transfer Pt. A: Applications*, vol. 26, no. 6, 1994, pp. 619-624.

Conference Proceedings

1. Palmer, J. and H. Hegab, Development of an Open Ended Junior Laboratory Experience to Prepare Students for Capstone Design, *2010 ASEE Annual Conference and Exposition*, Louisville, Kentucky, June 20-23, 2010, paper under review.
2. Mathew, B., John, T., Hegab, H, Dynamics of Fluid Flow in a Heated Square Microchannel, *10th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, Chicago, IL, 2010, paper accepted.
3. Mathew, B. and H. Hegab, Effect of Axial Heat Conduction and Internal Heat Generation on the Effectiveness of Counter Flow Microchannel Heat Exchangers, *10th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, Chicago, IL, 2010, paper accepted.
4. John, T., Mathew, B., and H. Hegab, Microchannel Heat Sinks with Embedded Pin Fin Structures, *10th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, Chicago, IL 2010, paper accepted.
5. John, T., Mathew, B., and H. Hegab, Characteristic Study on the Optimization of Micro Pin-Fin Heat Sink with Staggered Arrangement, *10th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, Chicago, IL, 2010, paper accepted.
6. Mathew, B. and H. Hegab, Parallel Flow Microchannel Heat Exchangers Subjected to Axial Heat Conduction and Internal Heat Generation, *10th AIAA/ASME Joint Thermophysics and Heat Transfer Conference*, Chicago, IL, 2010, paper accepted.
7. Soman, J., Mathew, B., John, T., and H. Hegab, Flow Distribution in Multichanneled Microdevices with In-line Manifolds, *2009 IMECE*, Lake Buena Vista, FL, 2009 (IMECE2009-11988)
8. John, T., Mathew, B., and H. Hegab, Characteristic Study on the Optimization of Pin Fin Micro Heat Sinks, *2009 IMECE*, Lake Buena Vista, FL, 2009 (IMECE2009-11816)
9. Mathew, B., and H. Hegab, Axial Heat Conduction in Parallel Flow Microchannel Heat Exchangers, *2009 IMECE*, Lake Buena Vista, Florida, 2009 (IMECE2009-11775).
10. Kunjumon, A., Mathew, B., and John, T., and H. Hegab, Modeling a Non-adiabatic Counter Flow Microchannel Heat Exchanger with Axial Heat Conduction, *2009 IMECE*, Lake Buena Vista, Florida, 2009 (IMECE2009-11765).
11. John, T., Mathew, B., and H. Hegab, Experimental Analysis of Poiseuille Number in Square Microchannels, *2009 IMECE*, Lake Buena Vista, Florida, 2009 (IMECE2009-11810).
12. John, T. and H. Hegab, Modeling Microfluidic Bubble Generators, *2009 ASME Fluids Engineering Summer Meeting*, Vail, Colorado, 2009 (FEDSM2009-78496).
13. John, T., Mathew, B., and H. Hegab, Analysis of the Diameter of Microbubbles formed in a Cross Flow Microchannel, *2009 ASME Fluids Engineering Summer Meeting*, Vail, Colorado, 2009 (FEDSM2009-78495).
14. Mathew, B., John, T., and H. Hegab, Effect of Manifold Design on Flow Distribution in Multichanneled Microfluidic Devices, *2009 ASME Fluids Engineering Summer Meeting*, Vail, Colorado, 2009 (FEDSM2009-78531).
15. Bellamkonda, R., John, T., Mathew, B., DeCoster, M., Hegab, H., and D. Davis, Nanowire-GMR Integrated Microfluidic Biosensor, *2009 ASME Fluids Engineering Summer Meeting*, Vail, Colorado, 2009 (FEDSM2009-78529).
16. Mathew, B., Tom, T. J., and Hegab, H., Effectiveness of Counter Flow Microchannel Heat Exchangers Subjected to External Heat Transfer and Internal Heat Generation, *2009 ASME Heat Transfer Conference*, San Francisco, CA, USA. (HT2009-88167)
17. Tom, T. J., Mathew, B., and Hegab, H., Analysis of Effectiveness of Parallel Flow Microchannel Heat Exchangers with Heat Transfer from Surroundings, *2009 ASME Heat Transfer Conference*, San Francisco, CA, USA. (HT2009-88230)

18. Mathew, B., and Hegab, H., Thermal Performance of Counter Flow Microchannel Heat Exchangers Subjected to Axial Heat Conduction and External Heat Transfer, *2009 ASME Heat Transfer Conference*, San Francisco, CA, USA. (HT2009-88250).
19. Bellamkonda, R., John, T., Mathew, B., DeCoster, M., Hegab, H., Palmer, J., and D. Davis, Microfabrication of Nanowires-based GMR biosensor, *Micro- and Nanotechnology Sensors, Systems and Applications*, Proc. of SPIE, vol. 7318, 3181H, 2009.
20. Swanbom, M., Harbour, D., Hegab, H., and D. Eddy, A Microprocessor-Based Control System Project for an Integrated Freshman Curriculum, *2009 ASEE Annual Conference*, San Antonio, TX, USA (AC2009-1335).
21. Mathew, B., and Hegab, H., Axial Heat Conduction in Counter Flow Microchannel Heat Exchangers, *2008 ASME Heat Transfer Conference*, Jacksonville, FL, USA (HT2008-56305).
22. Mathew, B., and Hegab, H., Effectiveness of Parallel Flow Microchannel Heat Exchangers with External Heat Transfer and Internal Heat Generation, *2008 ASME Heat Transfer Conference*, Jacksonville, FL, USA. (HT2008-56315).
23. Hall, D., Hegab, H., and J. Nelson, Living WITH the Lab – A Freshman Curriculum to Boost Hands-on Learning, Student Confidence and Innovation, *Proceedings of 2008 Frontiers in Education Conference*, Saratoga Springs, NY, USA, (no. 4720657), S3G8-S3G13.
24. Hegab, H. and D. Hall, Microfabrication of a Resistance Temperature Detector, *Proceedings of 2008 Frontiers in Education Conference*, Saratoga Springs, NY, USA, (no. 4720645), pp. S2A19-S2A24.
25. Mathew, B., Hegab, H., Effectiveness-NTU Relationship of Microchannel Counter Flow Heat Exchanger with Axial Conduction, *Proceedings of 2007 IMECE,* Seattle, WA, November 11-15, Volume 8, Part A, 2007, pp. 527-536.
26. Hegab, H. E., Hall, D., Increasing Experiential Learning in Freshman Engineering through a Microfabrication Project, *Proceedings of 2007 IMECE,* Seattle, WA, USA, Volume 7, 2007, pp. 367-371.
27. Mathew, B., Hegab, H. , Performance Evaluation of Parallel Flow Microchannel Heat Exchangers Subject to Constant External Heat Transfer, *Proceedings of 2007 IMECE,* Seattle, WA, USA, Volume 8, Part A, 2007, pp. 941-950.
28. Hegab, H., Microsystems and Nanosystems Engineering Education, *2006 Commercialization of Micro and Nano Systems Conference*, St. Petersberg, FL, USA.
29. Mathew, B. and H. Hegab, "External Heating Effects of the Effectiveness-NTU Relationship of a Counterflow Heat Exchanger," *Proceedings of 2006 IMECE – MicroElectroMechanical Systems Division*, Chicago, IL, USA, 2006, p. 335-337.
30. Hegab, H., Palmer, J., and S. Napper, "Development of a Nanosystems Engineering Degree," *Proceedings of 2005 IMECE,* Orlando, FL, USA, 2005, pp. 11-16.
31. Swanbom, M, Hegab, H., Hall, D., and A. Dettmer, "Evaluation of Conical Laser Projection Schemes for Optical Triangulation Pipe Measurement Techniques," *2005 NO-DIG conference*, April 14-18, Orlando, FL.
32. Dettmer, A., Hall, D., Hegab, H., and M. Swanbom, "Refining Laser Profiling Methods for Pipeline Assessment," *2005 NO-DIG conference*, April 14-18, Orlando, FL.
33. Jordan, W. and H. Hegab, "Introducing Rapid Protoyping into Different Classes," *2004 ASEE Annual Conference Proceedings*, 2004, pp. 8311-8321.
34. Hegab, H., Hall, D., Dettmer, A., Swanbom, M., and J. Pan, "Constructing Three Dimensional Wireframe Models of Pipelines Using Computer Vision Inspection, " *2004 NO-DIG conference*, March 22-24, New Orleans, LA.
35. Fleming, D., and H. Hegab, Design of a Collapsible Liquid Oxygen Storage Vessel for Mars, *43rd Structures, Structural Dynamics and Materials Conference*, vol. 4, 2002, pp. 2085-2096.
36. Hegab, H., Bari, A. and T. Ameel, "Experimental Investigation of Flow and Heat Transfer Characteristics of R-134a in Microchannels," *Proceedings of SPIE*, volume 4560, 2001, pp. 117-125.
37. Hegab, H. and G. Liu, "Fluid Flow Modeling of Micro-orifices Using Micropolar Fluid Theory," *Microfluidics Devices and Systems III*, *Proceedings of the SPIE*, vol. 4177, Santa Clara, CA, September 18-19, 2000, pp. 271-281.
38. Liu, G., and H. Hegab, "Numerical Simulation of Micro-Channel Flow with Slip Boundary Condition," *International Workshop on Computational Physics: Fluid Flow and Transport in Porous Media*, Beijing, China, August 2-6, 1999.
39. Hegab, H., Zimmerman, E., and G. Colwell, "Analysis of Soil Heat Exchangers for Thermal Management of Outdoor Electronic Cabinets," HTD-Vol. 361-3/PID-Vol. 3, Proceedings of ASME, 1998, pp. 191-196.
40. Zimmerman, E., Hegab, H., and G. Colwell, "Prevention of Overheating and Frequent Thermal Cycling of Outdoor Electronic Cabinets Cooled by Forced Air Convection in Cold Climates," *1996 International Mechanical Engineering Congress and Exposition (IMECE)*, Atlanta, GA, November 1996.
41. Zimmerman, E., Colwell, G., and H. Hegab, "Transient Modeling of the Thermal Behavior of Outdoor Electronic Cabinets," *9th International Conference on Numerical Methods for Thermal Problems*, Atlanta, GA, July 1995.

42. Zimmerman, E., Hegab, H. and G. Colwell, "Thermal Management of Outdoor Electronic Enclosures," *9th International Heat Pipe Conference*, Albuquerque, NM, May 1995.

Technical Reports and other Scholarly Works

1. Hegab, H., "Thermal Analysis of a Collapsible Cryogenic Vessel," 2001 NASA/ASEE Summer Faculty Fellowship Program, Kennedy Space Center, 10 pages.
2. Hegab, H., "Thermal Analysis of the NASA Integrated Vehicle Health Monitoring Experiment Technology for X-vehicles (NITEX)," 2000 NASA/ASEE Summer Faculty Fellowship Program, Kennedy Space Center, 10 pages.
3. Hegab, H., "The Value of an Interdisciplinary PhD," International Graduate, Empire Publishing Company, vol. 2, no. 1, 1998, pp. 28-29.
4. Colwell, G. and H. Hegab, "Cabinet Thermal Management Study," Thermal Forum 1993, Bell Northern Research, Atlanta Labs, Atlanta, GA.

TEACHING EXPERIENCE/SKILLS

Thermodynamics	Finite Element Analysis	Bulk Micromachining Processes
Heat Transfer	Numerical Methods	Soft Lithography
Fluid Mechanics	Instrumentation	Layer-by-layer Self Assembly
Thermal Systems Design	Measurements	SEM
HVAC Design	Microsystems Engineering	Surface Profilometry/AFM
Electronic Packaging	Nanosystems Engineering	Coventor® Simulation

PROFESSIONAL HONORS & AFFILIATIONS

- American Society of Mechanical Engineers (ASME) – associate member, 1993-present
- American Society of Heating, Refrigeration and Air-conditioning Engineers (ASHRAE) – associate member & student branch advisor, 1994-present
- American Society of Engineering Education (ASEE) – associate member, 1994-present
- Registered Professional Engineer in Louisiana, Reg. No. 27185
- Order of Engineer – member, 2004-present
- Louisiana Engineering Foundation Engineering Faculty Professionalism Award, 2006
- Louisiana Tech University Engineering Science Foundation Service Award 2004-05
- Louisiana Tech University College of Engineering & Science Outstanding Achievement in Education Award 2004-05
- Louisiana Tech University College of Engineering & Science Outstanding Achievement in Research Award 1997-98
- National Science Foundation Fellow 1991-93
- Georgia Tech Presidential Fellow 1989-93
- Pi Tau Sigma Mechanical Engineering Honor Society – student branch faculty advisor 1996-2000
- Tau Beta Pi Engineering Honor Society

PROFESSIONAL, UNIVERSITY & COMMUNITY SERVICE

- Reviewer for journals/conferences such as ASME National Heat Transfer Conference, ASME IMECE Conference, Journal of Micromechanics and Microengineering, Journal of Heat Transfer, International Journal Thermal Sciences, Advances in Cryogenic Engineering
- NSF Panel Reviewer, Michigan Research Competitiveness Program Reviewer
- Textbook reviewer for Prentice Hall, Wiley, and CRC Press in areas of thermodynamics, fluid mechanics, and nanotechnology
- FE Exam Review Instructor 1999-2004, FE Exam Proctor (2005-2007)
- Faculty Advisor for Society of Nanosystems Engineering Students (2006-2008)
- Mechanical Engineering Program Graduate Chairman (2000-2004)
- Mechanical Engineering Program Scholarship Committee Chair (1996-2000)
- Mechanical Engineering Search Committee (served on five faculty searches, chaired one)
- Mechanical Engineering Curriculum Committee member
- College Graduate Council Committee (1997-present, chaired one year)
- University Graduate Council Representative (1997-2004)

- University Faculty Senate Representative (2000-2002)
- Student branch advisor for ASHRAE (1997-present)
- Student branch advisor for Pi Tau Sigma (1998-2005)
- Faculty Advisor, Board Member, Finance Chair for Louisiana Tech Wesley Foundation (2006-present)
- FIRST LEGO League Coach (2006-present)
- Kiwanian, 1996-present, Past Distinguished Club President 2004-05
- Trinity United Methodist Church, member since 1995, served on Board of Trustees 2001-04, Long Range Planning Committee 2004-2007, children's Sunday school teacher, weekly life group bible study leader

REFERENCES

- Dr. Stan Napper, Dean
  College of Engineering and Science
  Louisiana Tech University
  Ruston, LA 71272
  (318) 257-3304
  e-mail: san@latech.edu

- Dr. James Palmer, Academic Director
  Chemical and Industrial Engineering Programs
  Louisiana Tech University
  Ruston, LA 71272
  (318) 257-2885
  e-mail: jpalmer@latech.edu

- Dr. David Hall, Program Chair
  Mechanical Engineering Program
  Louisiana Tech University
  Ruston, LA 71272
  (318) 257-4127
  e-mail: dehall@latech.edu

- Dr. William Jordan, Department Head
  Mechanical Engineering Department
  Baylor University
  Waco, TX 76798-7356
  (254) 710-4192
  e-mail: Bill_Jordan@baylor.edu