UNIVERSITY OF MASSACHUSETTS • LOWELL
*Personnel Form #6*

# COMPREHENSIVE PROFESSIONAL VITAE

Date: May, 2009

**Name:** Julie Chen
**Department**: Mechanical Engineering
**Field**: Solid Mechanics and Materials
**College:** Engineering
**Rank**: Professor

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## A. EDUCATION AND ACADEMIC QUALIFICATIONS

### 1. Education (Specify degrees, institutions, dates, honors, major fields of study, etc.)

1988-1991 Ph.D. Massachusetts Institute of Technology, Cambridge, MA
Department of Mechanical Engineering
*Dissertation: The Application of Continuum Mechanics to the Stochastic Modeling of Fracture in Fiber-Fiber Composites*
*Thesis Advisor: Professor Stanley Backer*

1986-1988 M.S. Massachusetts Institute of Technology, Cambridge, MA
Department of Mechanical Engineering
*Dissertation: Three-Strand Rope Behavior in Tension and Torque*
*Thesis Advisor: Professor Stanley Backer*

1982-1986 B.S. Massachusetts Institute of Technology, Cambridge, MA
Department of Mechanical Engineering
*Dissertation: Contact Stress Measurement in an Interface Separation Apparatus*
*Thesis Advisor: Professor Michael P. Cleary*

Academic Honors

- Tau Beta Pi, *Engineering Honor Society*
- Pi Tau Sigma, *Mechanical Engineering Honor Society*
- Sigma Xi, *Scientific Research Society*
- MIT Senior Scholar-Athlete (1986), *top student-athlete in the senior class*
- GTE Academic All-American, First Team (1986), *recognized nationally as an outstanding student-athlete in both field hockey and softball*
- Xerox Corporation Scholarship(1984), *undergraduate engineering scholarship*
- Digital Equipment Corporation Scholarship(1983), *undergraduate engineering scholarship*
- Presidential Scholar(1982), *one of two students selected from each state*

**2. Academic Experience (Length of time at each institution, rank(s) held, etc.)**

| | |
|---|---|
| **2003-present** | **Professor of Mechanical Engineering**<br>University of Massachusetts Lowell (Lowell, MA) |
| **2005-present** | **Co-Director, UML Nanomanufacturing Center**<br>**(lead for state-funded Nanomanufacturing Center of Excellence)**<br>University of Massachusetts Lowell (Lowell, MA) |
| **2002-2004** | **Program Director, NanoManufacturing (2003-2004) and Materials Processing & Manufacturing (2002-2003)**<br>Division of Design, Manufacture, and Industrial Innovation<br>Directorate for Engineering<br>National Science Foundation (Arlington, VA) |
| **1997-present** | **Co-Director, Advanced Composite Materials and Textile Research Center**<br>University of Massachusetts Lowell (Lowell, MA) |
| 1997-2003 | Associate Professor of Mechanical Engineering<br>University of Massachusetts Lowell (Lowell, MA) |
| 2001 | Visiting Researcher, Ecole Nationale Superieure d'Arts & Metiers (ENSAM-Paris) and ESEM, University of Orleans (France) |
| 1994 | NASA/ASEE Summer Faculty Fellow, Polymers and Composites Branch<br>Materials Division, Langley Research Center (Hampton, VA) |
| 1991-1997 | Assistant Professor of Aerospace and Mechanical Engineering<br>Boston University (Boston, MA) |
| 1986-1991 | Graduate Research Assistant, Fibers & Polymers Laboratory<br>M.I.T. (Cambridge, MA) |
| 1985-1986 | Undergraduate Research Assistant, Resource Extraction Laboratory<br>M.I.T. (Cambridge, MA) |
| 1983, 1984 | Summer Engineering Intern<br>Xerox Corporation (Webster, NY) |
| 1984 | Undergraduate Research Assistant, Orthopedics Laboratory<br>Massachusetts General Hospital (Boston, MA) |

## B. PROFESSIONAL ACTIVITIES

### 1. Professional Association Participation (State nature of participation: paper read, panel discussant, office holder, etc.)

#### a. Membership in Professional Societies:

American Society for Mechanical Engineers (ASME)

- Technical Program Chair (ASME-IMECE ’10)
- Congress Steering Committee (2008-present)
- Symposium Co-Organizer (ASME-IMECE ’03, Design and Manufacturing of Composites)
- Symposium Co-Organizer (ASME-IMECE ’02, Design and Manufacturing of Composites)
- Symposium Co-Organizer (ASME-IMECE '96, Design and Manufacturing of Composites)
- Materials Division, Composites Committee Vice-Chair (2004-2005)
- Materials Division, Composites Committee Chair (2005-2006)
- Materials Division, Executive Committee, Secretary/Treasurer (2008-present)

American Society for Composites (ASC)

- Co-Organizer, International Symposium on Affordable Composites Manufacturing, 2000
- Polymer Matrix Composites Committee Member

European Scientific Association for Material Forming (ESAFORM)

- Mini-Symposium Organizer (ESAFORM 2002)
- Session Chair

The Fiber Society

- elected Governing Council Member, 1999-2002
- Student Award Committee Chair, 1999
- Student Award Committee, 1997-1999

American Society for Engineering Education (ASEE)

Society for Advancement of Materials and Process Engineering (SAMPE)

American Institute for Aeronautics and Astronautics (AIAA) (1991-1995)
Technical Association of the Pulp and Paper Industry (TAPPI) (1989-1992)
International Nonwovens and Disposables Assocation (INDA) (1989-1991)

Workshop Co-organizer (International Composites Sheet Forming Workshop, MIT, Cambridge, MA, July 11-12, 1995)

#### b. Membership on Editorial and Peer Review Boards

Member of **National Science Foundation** Proposal Review Panel for

- Division of Engineering Education and Centers – Division review panel
- Nanoscale Science and Engineering Centers – Center review panels
- Engineering Research Centers
- Civil, Mechanical, and Manufacturing Innovation (CMMI, merged division of DMII and CMS)

- Design, Manufacture, and Industrial Innovation (DMII)
- Civil and Mechanical Systems (CMS)
- Chemical, Bioengineering, Environment, and Transport
- Research Experiences for Undergraduates
- Instrumentation and Laboratory Improvement, Course and Curriculum Development
- Small Business Innovation Research Grants

Member of Review Panels for:

- **National Academies Army Research Laboratory** Technical Assessment Board (ARL) – Air and Ground Vehicle Technology
- Department of Energy – Nanomanufacturing for Energy Efficiency
- Air Force Office of Scientific Research (**AFOSR**) - Mechanics of Materials and Structural Mechanics
- National Institute of Health (**NIH**) – Rehabilitation Medicine SBIR/STTR

Journal Reviewer for:

- Journal of Composite Materials (**Editorial Advisory Board**)
- International Journal of Forming Processes (**International Advisory Committee**)
- Composites Manufacturing (Composites Part A, Applied Science and Manufacturing)
- Composites, Part B, Engineering
- Journal of Nanoparticle Research
- Polymer Composites
- Polymer Engineering and Science
- Journal of Applied Mechanics
- Textile Research Journal
- TAPPI Journal

## 2. Professional Awards and Honors

| | |
|---|---|
| 2008 | Invited testimony, US House of Representatives, Committee on Science and Technology, Subcommittee on Research and Science Education, "The Transfer of National Nanotechnology Initiative Research Outcomes for Commercial and Public Benefit", March 11, 2008 |
| 2008 | Invited Participant, NSF workshop on Grand Challenges in Bio and Nanomanufacturing |
| 2005 | National Academy of Engineering, German-American Frontiers of Engineering Program |
| 2002 | Invited Participant, US-Italy Workshop on Nanomaterials, Washington, DC (March) |
| 2002 | Invited Participant, NSF-EC Wksp on Nanomanufacturing and Processing, San Juan, PR (Jan) |
| 2002 | National Academy of Engineering, Frontiers of Engineering Program (goal is to bring together outstanding leaders from industry, academia, and government labs; participation limited to 100 engineers, age 30-45. |
| 2001 | Co-organizer and host of NSF Workshop on Composite Sheet Forming, Lowell, MA (Sept) (participants from international and US universities, industries, and government labs) |
| 2001 | International Advisory Board, International Journal of Forming Processes |
| 2001 | Editorial Advisory Board, Journal of Composite Materials |
| 1999 | International Advisory Committee, Polymer Composites '99, International Symposium on Polymer Composites Science and Technology, Society of Plastics Engineers |
| 1998 | Invited Participant, First Korea-US Seminar on Composite Materials |
| 1998 | International Conference on Composites Engineering (ICCE/5) Distinguished Lecture |

## C. RESEARCH

### 1. Grants and Contracts

**Summary of Grants and Contracts while at UMass Lowell**

**a. Large Ongoing Grants:** (Julie Chen is Principal Investigator, except as noted) (in addition to the grants listed below, I have received many smaller grants, on the order of $1K to $25K, primarily for smaller collaborative projects with industry and seed funds)

| | |
|---|---|
| Project Title: | **Manufacture of Semi-Permeable Coatings on Textiles (co-PI, with Dr. Jun Lee)** |
| Source of Support: | EIC Labs (Army SBIR Phase II) |
| Total Award Amount: | $134,569 (5/09-4/11) |
| Project Title: | **Industrial Safety of Nanoheaters (PI)** |
| Source of Support: | National Science Foundation |
| Total Award Amount: | $589,776 (Collaborative With Northeastern, Tufts) (9/07-8/09) |
| Project Title: | **The Science of Small Things (Senior Personnel Only)** |
| Source of Support: | National Science Foundation |
| Total Award Amount: | $755,691 (9/07 to 8/10) |
| Project Title: | **Nanomanufacturing of Multifunctional Sensors** (**co-PI, with Professors Joey Mead and Carol Barry, multiple faculty**) |
| Source of Support: | Army Research Lab/WMRD |
| Total Award Amount: | $2,800,000 (multiple faculty effort) (9/07-8/09, renewable) |
| Project Title: | **Linking Process-Induced Properties to Thermoplastic-Matrix Woven-Fabric Composites Performance (Co-PI, with Professors Jim Sherwood (PI) and Larissa Gorbatikh**) |
| Source of Support: | National Science Foundation |
| Total Award Amount: | $360,000 (9/05-8/09) |
| Project Title: | **Nanomanufacturing Center of Excellence (PI, with Carol Barry and Joey Mead, multiple faculty)** |
| Source of Support: | Massachusetts Technology Collaborative |
| Total Award Amount: | $4,955,120 (7/05-6/10) |

**b. Completed Grants at the University of Massachusetts Lowell:**

| | |
|---|---|
| Project Title: | **MRI: Acquisition of a 3D Scanning Laser Vibrometer (co-PI, with Professors Niezrecki (PI), Avitabile, Sherwood, and Kurup)** |
| Source of Support: | National Science Foundation |

| | |
|---|---|
| Total Award Amount: | $491,575 (7/07-6/08) |
| Project Title: | **Deformation Measurement and Modeling of Parachute Fabric Using Imaging and Smart Material Sensors (co-PI, with Professors Niezrecki (PI) and Niemi)** |
| Source of Support: | Natick Soldier Center |
| Total Award Amount: | $103,128 (3/06-5/07) |
| Project Title: | **US-Japan Young Researchers Exchange Program in Nanomanufacturing and Nanotechnology (PI)** |
| Source of Support: | National Science Foundation |
| Total Award Amount: | $69,837 (3/06-2/07) |
| Project Title: | **Multifunctional Composites (PI, with Professors Avitabile and Sherwood)** |
| Source of Support: | NASA SBIR Phase II through EIC Laboratories |
| Total Award Amount: | $136,268 (2004-2006). |
| Project Title: | **Design of an Attachment Insert for a Balsa-Core Composite Panel (co-PI with Professor Sherwood)** |
| Source of Support | Office of Naval Research Phase II STTR with KaZaK Composites |
| Total Award Amount: | $120,000, (2003-2004). |

*Note that as a Program Director at NSF (2002-2004), I was not allowed to be a PI or co-PI on any federal grants. My students, however, were active in several new grants from NSF, Kazak Composites, Aerogel Composites, Triton Systems, etc. (in most cases with Professor James Sherwood as PI)*

| | | | |
|---|---|---|---|
| 4/02-3/05 | "Interface Effects In High Volume Nanoscale Processing Of Polymers (co-PI with Professors Joey Mead (PI) and Carol Barry) | National Science Foundation | $388,893 |
| 4/99-3/02 | "Intelligent Material and Process Design for Stamping of Structural Composites" (Joint grant with Northwestern University) | National Science Foundation | $322,025 |
| 5/00-4/03 | "Substrate-Coating Interaction in Coated Fabrics", with Univ of California – Davis and UMass-Dartmouth | National Textile Center | $280,000 |
| 7/01-3/02 | "Design, Fabrication, and Testing of a Versatile Outfitting Attachment System Kit for Naval Sandwich Panels" (Joint Phase I STTR with Kazak Composites) | Office of Naval Research | $30,999 |
| 2/01-12/01 | "NSF Workshop on Composite | National Science | $25,000 |

| | | | |
|---|---|---|---|
| | Sheet Forming" (joint grant with Northwestern University) | Foundation | |
| 4/01-10/01 | "Composite Plate Impact Study for the Navy"(subcontract through Oasis) | Naval Undersea Warfare Center | $6,500 |
| 7/98-6/01 | "Modeling of Co-mingled Glass/ Thermoplastic Fabrics for Low Cost/ High Volume Composites Manufacturing" GOALI (Grant Opportunities for Academic Liaison with Industry) | National Science Foundation | $257,456 |
| 7/98-12/00 | "Supplemental Travel Expenses for Conducting Research at the Ford Scientific Research Lab" | Ford Motor Co (Dearborn, MI) | $6,400 |
| 5/98-4/01 | "High Stress Elastic Materials" with UMass-Dartmouth | National Textile Center | $140,000 |
| 9/99-12/00 | "An Integrated Experimental/Numerical Approach for Modeling and Understanding the Energy Management of Composite Materials during a Crash", (PI: J. Sherwood) | Ford Motor Company | $87,884 |
| 12/99-11/00 | "Novel Thermoplastic Composite Manufacturing Process to Produce Affordable Integrated Ship Topside Structures (PI: S. McCarthy) | UML Office of Collaborative Research (seed grant) | $15,000 |
| 7/98-6/00 | "Creep Characterization of Syntactic Foam Insulating Material" | Emerson & Cuming Composite Materials (Canton, MA) | $16,492 |
| 9/99-1/01 | "Characterization of Tekpad Dilatant Compound Polymer for Impact Protection" | I-Tek (Peabody, MA) | $13,519 |
| 7/98-6/00 | "Composite Structure Analysis" | Kazak Composites (Woburn, MA) | $5,000 |
| 2/97-2/98 | "Composite Technical and Engineering Support for Building an Electric Vehicle" | Solectria/NAVC (Wilmington, MA) | $25,000 |
| 2/97-2/98 | "Design for Crashworthiness" (PI: J.Sherwood) | Solectria/NAVC (Wilmington, MA) | $25,000 |
| 1/99-12/99 | "Finite Element Analysis and Materials Characterization for Hollow-Fiber | Innovative Membrane Systems/Praxair | $19,980 |

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|---|---|---|---|
| | Composite Material | (Norwood, MA) | |
| 8/98-12/99 | "Flexure and Shear Response of E-beam Curable Resins" | Aeroplas (Hollis, NH) | $2,700 |
| 8/98-6/00 | "Evaluation of 3D Producibility Fixtures and Material Producibility" | Composite Design Technologies (Waltham, MA) | $8,303 |
| 8/98-1/99 | "Materials Characterization of Hybrid Composites" | ARC Technologies (Amesbury, MA) | $1,350 |
| 8/98-6/99 | "Advanced Instrumentation of Drop-Weight Impact Tower for Measure-ment of Energy Absorption and Crashworthiness | UML Research Foundation (seed grant) and Joseph P. Healey Endowment | $4,000 |

**c. Completed Grants at Boston University : (PI for all grants listed)**

**Summary of Grants and Contracts while at Boston University**

| | | | |
|---|---|---|---|
| 1997 | "Research in Materials and Process Parameters for Composites Manufacturing" | United Technologies (CT) | $ 26,000 (balance returned) |
| 1994-97 | NSF Research Initiation Award (RIA): "Modeling of textile structure deformation for composites manufacturing" | National Science Foundation | $ 99,000 |
| 1996 | NSF Research Experiences for Undergraduates (supplement to RIA) | National Science Foundation | $ 10,000 |
| 1995-96 | "Modeling of wrinkling during forming of composites" | United Technologies (CT) | $ 20,000 |
| 1995-96 | SBIR Phase II: "Improved Pressurized Fabric Arches" | Merix Corporation (Needham, MA) | $ 30,000 |
| 1993 | SBIR Phase I: "Improved Pressurized Fabric Arches" | Merix Corporation (Needham, MA) | $ 8,000 |
| 1995 | "Effect of Defects: Braid Misalignment" | Fiber Innovations | $ 600+in-kind |
| 1992-94 | NSF Research Planning Grant: "Conformability of Fiber Preform Architectures" | National Science Foundation | $ 18,000 |

## 2. Academic & Professional Publications

### a. Refereed Journal Publications and Refereed Conference Papers:

1. Cui, Q., Jogdand, H., Chen, J., and Gu, Z., "Structure and Ignition Properties of Nanoheaters Formed by Bimetallic Al-Ni Reactive Nanostructures", *2008 MRS Fall Meeting Proceedings* .
2. Jogdand,H., Gulsoy,G., Ando,T., Chen,J., Doumanidis,C.C., Gu,Z., Rebholz, C., and Wong,P., "Fabrication and characterization of nanoscale heating sources ("Nanoheaters") for nanomanufacturing", *NSTI-Nanotech 2008*, ISBN 978-1-4200-8503-7 (2008) Vol.1, 280-283
3. Morris, C.D., Sherwood, J., Chen, J., and Cao, J., "An Experimental Investigation of the Fabric/Tool and Fabric/Fabric Friction during the Thermostamping Process", *Int J Material Forming*, online April 2008.
4. Lee,W., Padvoiskis,J.,Cao,J.,de Luycker,E., Boisse,P., Morestin,F.,Chen,J., and Sherwood, J.,"Bias-Extension of Woven Fabric Composites", *Int J Material Forming*, online April 2008
5. Cao, J., Akkerman, R., Boisse, P., Chen, J., Cheng, HS, de Graaf, EF, Gorczyca, JL, Harrison P, Hivet, G, Launay, J., Lee, W., Liu, L, Lomov, SV, Long, A., de Luycker, E., Morestin, F., Padvoiskis, J., Peng, XQ, Sherwood, J., Stoilova, Tz., Tao, XM, Verpoest, I., Willems, A., Wiggers, J., Yu, TX, and Zhu, B., "Characterization of mechanical behavior of woven fabrics: Experimental methods and benchmark results," *Composites Part A: Applied Science and Manufacturing*, 2008.
6. Gorczyca, J., Sherwood, J. and Chen, J., "Development of a Friction Model for Use in the Thermostamping of Commingled Glass-Polypropylene Woven Fabrics," *Composites Part A*, Vol. 38, p. 393-406, 2007.
7. Farboodmanesh S., Chen J., Mead J. and White K., "Effect of Fabric Construction on Mechanical Behavior of Rubber Reinforced Fabric", *Rubber Chemistry and Technology*, Vol. 79(2) Pages 119-216, 2006
8. Lu Liu, Julie Chen, Xiang Li, James Sherwood, "Two-Dimensional Macro-Mechanics Shear Models of Woven Fabrics", *Composites Part A*, Vol. 36, p. 105-114, 2005.
9. Gorczyca, J., Sherwood, J. and Chen, J., "A Friction Model for use with a Commingled Fiberglass-Polypropylene Plain-Weave Fabric and the Metal Tool during Thermostamping", *European Finite Element Revue*, Vol. 14, No. 6-7, p. 729-751, 2005.
10. Farboodmanesh, S., Yesilalan, E., Chen, J., Laoulache, R., Mead, J.L., Warner, S.B., and White, K.D., Effect of Coating Thickness and Penetration on Shear Behavior of Coated Fabrics," *J. Elastomers and Plastics*, Vol. 37, pp.197-228, July 2005.
11. Li, X., Sherwood, J., Liu, L. and Chen, J., 2004, "A material model for woven commingled glass-polypropylene composite fabrics using a hybrid finite element approach", *International Journal of Materials and Product Technology*, Vol. 21, p. 59-70, 2004.
12. Liu, L., Chen, J., Gorczyca, J.L., and Sherwood, J.A., "Modeling of Friction and Shear in Thermostamping of Composites – Part II," *J. Composite Matls*, 38(21), pp.1931-1947, 2004.
13. Gorczyca, J., Sherwood, J., Lu, L. and Chen, J., 2004, "Friction and Shear in Thermostamping of Composites - Part I", *Journal of Composite Materials*, Vol. 38, p. 1911-1929, 2004.
14. Bunyan, N., Chen, J., Chen, I., and Farboodmanesh, S., "Disc Electrode for Converging and Directing Electrospun Fibers," INTC, 2003.
15. Xue, P., Cao, J., and Chen, J., "Integrated Micro/Macro Mechanical Model of Woven Fabric Composites under Large Deformation," *Composite Structures*, Vol 70(1), pp. 69-80, 2003.
16. Peng, X.Q., Cao, J., Chen, J., Xue, P., Lussier, D.S., and Liu, L."Experimental and numerical analysis on normalization of picture frame tests for composite materials," *Composites Sci & Tech*, V. 63, 2003.

17. Tao, Z., Chen, J., Mead, J.L., and Stacer, R., "Rubber/fiber interactions during the tearing of rubber coated polyester fabrics," in review, *Rubber Chemistry & Technology*, 2002.
18. DaSilva, R.A, and Chen, J., "Lateral compaction effects in braided structures," accepted, *Polymer Composites*, 2002.
19. Chow, J., and Chen, J., "Experimental analysis on woven thermoplastic composite surface friction during forming," in revision, *J. Thermoplastic Composite Materials*, 2002.
20. Chen, J., Lussier, D.S., Cao, J., and Peng, X.Q., "Materials characterization methods and material models for stamping of plain woven composites," paper selected for special ESAFORM 4 issue of *Int J. of Forming Processes*, Vol.4, issues 3-4, 2002.
21. Lussier, D.S., and Chen, J., "Material Characterization of Woven Fabrics for Thermoforming of Composites," *J. Thermoplastic Composite Materials*, Vol. 15, n.6, pp.497-510, 2002.
22. Bulusu, A., and Chen, J., "Modeling the Unit Cell Geometry of Twill Weave Fabrics during Shear Deformation," *J. Thermoplastic Composite Materials*, in revision.
23. Chen, J. Sherwood, J.A., Buso, P., Chow, S., and Lussier, D., "Stamping of Continuous Fiber Thermoplastic Composites," *Polymer Composites*, V.21, n.4, pp.539-547, August 2000.
24. King, M.J., Chen, J., Sherwood, J.A., and Brachos, V., "Effect of Local Material Variations on Tapered Sandwich Structures," *Journal of Reinforced Plastics and Composites*, Vol.18, No.16, 1999, 1479-1495.
25. Glenn, T.A., Chen, J., and Sherwood, J.A., "Carbon/Glass Hybridization: Another degree of freedom for composite structures," *SAMPE Journal*, Vol.34, No.3, pp.22-31, 1998.
26. Chen, J., McBride, T.M., and Sanchez, S., "Sensitivity of Mechanical Properties to Braider Tow Misalignment in Triaxial Braid Composites," *J. of Composites Tech & Research*, 20(1) pp.13-17, 1998.
27. Patterson, M., Douglas, C.D., Sherwood,J.A., and Chen, J., "Effect of Fillet Radius and Tape on the Tee Jointing of Advanced Composite Laminates," *Composites Part B:Engineering Journal*, accepted for publication, 1998.
28. McBride, T.M. and Chen, J. "Unit-cell Geometry in Plain-Weave Fabrics During Shear Deformation," *Composites Science and Technology*, 57, pp.345-351, 1997.
29. Prodromou, A.G. and Chen, J. "On the Relationship between Shear Angle and Wrinkling of Textile Composite Preforms," *Composites Part A*, 28A, pp.491-503, 1997.
30. Pan, N, Chen, J., Seo,M., and Backer,S.,``Micromechanics of a Planar Hybrid Fibrous Network", *Textile Research Journal*, 67(12), pp.907-925, 1997.
31. Seo,M., Wu,H.C., Chen, J., Toomey,C.S., and Backer, S., ``Wear and Fatigue of Mooring Lines: Nylon vs. Polyester" *Textile Research Journal*, 67(7), pp.467-480, 1996
32. Chen, J., ``Process Induced Distortion in Textile Composites", in Vol.III, Processing and Manufacturing, Proceedings of the Tenth International Conference on Composite Materials, ed. A. Poursartip and K.N.Street, pp.III-221-228, ICCM-10 Society/Woodhead Publ., Vancouver BC, 1995.
33. Chen, J., "The Statistico-Mechanical Response to Continuum Strain Fields --- A Fracture Model for Papers/Nonwovens", *INDA Journal of Nonwovens* Research, Vol.4, No.1, pp.35-40, 1992.
34. Wu, H.C., and Chen, J., "Experiment on a Two-Filament Twisted Structure", *Textile Research Journal*, Vol.61, No. 11, pp.635-636, November 1991.

b. **Conference Proceedings Papers:**

1. David Jauffrès, Corey D. Morris, James Kremer, James A. Sherwood, and Julie Chen, "Simulation of the Thermostamping of Woven Composites: Mesoscopic Modeling Using FEA Explicit Codes", *Proceedings of the 12th ESAForm Conference on Material Forming, Univ of Twente, Enschede, Netherlands*, 2009.
2. David Jauffrès, Corey D. Morris, James A. Sherwood, and Julie Chen, "Simulation of the Thermostamping of Woven Composites: Determination of the Tensile and In-Plane Shearing Behaviors," *Proceedings of the 12th ESAForm Conference on Material Forming, Univ of Twente, Enschede, Netherlands*, 2009
3. Lisa M. Gamache, James A. Sherwood, Julie Chen and Jian Cao, "Characterization of the Fabric/Tool and Fabric/Fabric Friction during the Thermostamping Process," *Proceedings of the 10th ESAForm Conference on Material Forming*, Zaragoza, Spain, 2007.
4. Farboodmanesh, S., Chen, J., and Mooskian, J.J., "Patterning and controlling electrospun fibers for tissue performance," *INDA-TAPPI International Nonwoven Technical Conference* 2006, Houston, TX, September 2006. (best paper award)
5. Xiang Li, James Sherwood, Jennifer Gorczyca, Julie Chen and Lu Liu, "A Study of the Thermostamping Process for a Woven-Fabric Composite," *3rd MIT Conference on Computational Fluids and Solid Mechanics*, June 14-17, Cambridge, MA, 2005.
6. Xiang Li, James A. Sherwood, Lu Liu, and Julie Chen, "Simulation of Double Dome Stamping of Twill Woven Fabric Composites," *Proceedings of the 8th ESAForm Conference on Material Forming*, Cluj, Romania, 2005
7. Lu, L., Chen, J., and Sherwood, J.A., "Material Modeling and Benchmark Testing of Woven-Fabric Composites in the Thermo-Stamping Process," 7th ESAFORM conference on material forming, Trondheim, NORWAY, April 2004.
8. Gorczyca, J.L., Sherwood, J.A., and Chen, J., "Friction at the Tool-Fabric Interface during the Thermostamping of Woven Commingled Glass-Polypropylene Composite Fabrics," 7th ESAFORM conference on material forming, Trondheim, NORWAY, April 2004.
9. Cao,J., Cheng,H.S., Yu,T.X., Zhu,B., Tao,X.M., Lomov,S.V., Stoilova,Tz., Verpoest,I., Boisse,P., Launay,J., Hivet,G., Liu,L., Chen,J., de Graaf,E.F., Akkerman,R., "A Cooperative Benchmark Effort on Testing of Woven Composites, 7th ESAFORM conference on material forming, Trondheim, NORWAY, April 2004.
10. Bunyan, N., Chen, J., Chen, I., and Farboodmanesh, S., "Disc Electrode for Converging and Directing Electrospun Fibers," ACS Meeting, New York, 2003.
11. Peng, X.Q., Cao, J., and Chen, J., "Stamping simulation of woven composites using a non-orthogonal constitutive model," 6th ESAFORM conference on material forming, Salerno, ITALY, April 2003.
12. Xue, P., Cao, J., and Chen, J., "Micromechanical model of woven fabric composite under large deformation," American Society for Composites 17th Technical Conf, Purdue, IN, October, 2002.
13. Lussier, D.S., Chen, J., and Sherwood, J. "Viscosity-based models for shear of glass/thermoplastic fabrics," ESAFORM-5, Krakow, POLAND, April, 2002.
14. DaSilva, R.A., and Chen, J., "Lateral compaction effects in braided structures," ASME-IMECE, New York, NY, November, 2001.
15. Lussier, D.S, Chow, S., and Chen, J., "Shear and friction response of co-mingled glass/polypropylene fabrics during stamping," American Society for Composites 16th Technical Conf, Blacksburg, VA, September, 2001.

16. Gorczyca, J.L., Sherwood, J.A., Chen, J., and Buso, P.P., "Finite element modeling of the shear behavior of woven co-mingled glass/thermoplastic composite," American Society for Composites 16th Technical Conf, Blacksburg, VA, September, 2001.
17. Chen, J., Cao, J., Lussier, D.S., and Peng, X.Q., "Materials Characterization Methods and Material Models for Stamping of Plain Woven Composites," ESAFORM Conference, Belgium, April 2001
18. Peng, X.Q., Lussier, D.S., Cao, J., and Chen, J., "Material Behavior Characterization of Textile Composite Sheets: Experiments and Simulation," TMS Ann Mtg, New Orleans, LA, February 2001
19. Lussier, D.S., and Chen, J., "Shear Frame Standardization for Stamping of Thermoplastic Woven Fabric Composites," 32nd Intl SAMPE Tech Conf, Boston, MA, Nov 6-9, 2000.
20. Chow, S., and Chen, J., "Transverse Thermal Conductivity and Friction Test Design for Woven Thermoplastic Preforms," 32nd Intl SAMPE Tech Conf, Boston, MA, Nov 6-9, 2000.
21. Bulusu, A., and Chen, J., "Shear Deformation and Unit Cell Modeling of Woven Fabrics using Cubic Spline Interpolation," 32nd Intl SAMPE Tech Conf, Boston, MA, Nov 6-9, 2000.
22. Lussier, D.S., and Chen, J., "Material Characterization of Woven Fabrics for Thermoforming of Composites," Intl Symp on Affordable Composites Mfg, American Society for Composites 15th Technical Conf, College Station, TX, Sept 25-27, 2000.
23. Bulusu, A., and Chen, J., "Modeling the Unit Cell Geometry of Twill Weave Fabrics during Shear Deformation," Intl Symp on Affordable Composites Mfg, American Society for Composites 15th Technical Conf, College Station, TX, Sept 25-27, 2000.
24. King, M.J., and Chen, J., "Fatigue of Tapered Sandwich Structures," 31st Intl SAMPE Technical Conference, Chicago, IL, October 26-30, 1999. (invited speaker)
25. Chen, J., Sherwood, J.A., Buso, P., Chow, S., and Lussier, D. "Stamping of Continuous Fiber Thermoplastic Composites," Polymer Composites '99, Intl Symp on Polymer Composites Science and Technology, Quebec, CANADA, October 6-8, 1999 (invited speaker).
26. Chen, J. and Sherwood, J.A., "Stamping of Co-mingled Glass/Thermoplastic Fabrics," SAMPE-ACCE-DOE Adv Composites Conf, 1st Intl SAMPE Automotive Conference, Detroit, MI, September 27-28, 1999
27. Hong, E., and Chen, J., "Energy Absorption of Edge-loaded Sandwich Structures," 14th Annual Technical Conference on Composite Materials, American Society of Composites, Dayton, OH, September 27-29, 1999
28. King, M.J., Chen, J., Sherwood, J.A., and Brachos, V. "Effect of Local Material Variations on Tapered Sandwich Structures" 13th Annual Technical Conference on Composite Materials, American Society of Composites, Baltimore, MD, September 21-23, 1998
29. Chen, J. and McBride, T.M., "Textile Structure Deformation: Implications For Processing And Performance," 1st Korea-US Seminar on Composites, Seoul, Korea, September 1998 (Invited speaker)
30. Chen, J., and McBride, T.M., "The Effect of Textile Architecture on Formability," International Conference on Composites Engineering (ICCE/5) Distinguished Lecture, Las Vegas, July 1998
31. McBride, T.M., Chen, J., and Lam, L., "Effects of Forming-Induced Evolution of Microstructure in Plain Weave Composites," 12th Annual Technical Conference on Composite Materials, American Society of Composites, Dearborn, MI, October 6-8, 1997
32. Chen, J., McBride, T.M., and Sanchez, S., "Sensitivity of Mechanical Properties to Braider Tow Misalignment in Triaxial Braid Composites," 11th Annual Technical Conference on Composite Materials, American Society for Composites, Atlanta, GA, July 1996.

33. Seo,M., Wu,H.C., Chen, J., Toomey,C.S., and Backer, S., "Wear and Fatigue of Mooring Lines: Nylon vs. Polyester", The Fiber Society, Fall 1996 Technical Conference, 1996
34. Chen, J. and Prodromou, A.G., ``Effect of Fabric Properties on Distortion During Composites Forming", in Mechanics of Plastics and Plastic Composites, ed. M.C.Boyce, MD-Vol.68/AMD-Vol.215, pp.89-96, ASME, New York, 1995.
35. Krauss, G.G., Chen, J., and Barbone,P.E., "Use of Guided Waves for Detection of Interior Flaws in Layered Materials", in Review of Progress in Quantitative Nondestructive Evaluation, Vol.14, pp.1869-1876, Plenum Press, NY, 1995.
36. Chen, J., and McBride,T.M., ``Measurement of Unit Cell Deformation in Forming of Textile Composites", in Processing, Design, and Performance of Composite Materials, ed. T.S.Srivatsan, et al, MD-Vol.52, pp.173-181, ASME, New York, 1994.
37. Chen, J., "Limits on the Applicability of a Continuum Model to Fracture in Paper", in Mechanics of Cellulosic Materials, ed. R.W.Perkins, AMD-Vol.145/MD-Vol.36., pp.69-74., ASME, New York, 1992.

c. **Books and Chapters**

1. Farboodmanesh, S., Chen, J., Tao, Z., Mead, J., and Zhang, H., "Base Fabrics and Their Interactions in Coated Fabrics" in Smart Textile Coatings and Laminates, ed. W.C. Smith, Woodhead Publishing, 2010.
2. Chen, J. and Sellers, K., "Overview of Manufacturing Processes," in Nanotechnology and the Environment, ed. K. Sellers, Taylor and Francis, 2008.
3. Gorczyca-Cole, J.L., Chen, J., and Cao, J. "Benchmarking of composite forming modeling techniques," in Composites Forming Technologies, ed. A.C. Long, The Textile Institute, CRC Press, Woodhead Publishing, 2007.
4. Barry, C., Chen, J., Mead, J., and Schmidt, D., "Multiscale Processing of Polymers and Nanocomposites," in Materials Processing Handbook, ed. J. Groza, CRC Press, 2007.
5. Schmidt, D., Mead, J., Barry, C., and Chen, J., "Nanomanufacturing with Polymers", in Handbook of Plastics Technologies, ed. C.A. Harper, McGraw-Hill, 2006.
6. Barry, C., Chen, J., and Mead, J., "Nanomanufacturing Processes using Polymeric Materials," in Nanomanufacturing Handbook, ed. A. Busnaina, CRC Press, 2006.
7. Bunyan, N., Chen, J., Chen, I., and Farboodmanesh, S., "Electrostatic Effects on Electrospun Fiber Deposition and Alignment," in Polymeric Nanofibers, ed. D. Reneker, Amer Chemical Society, 2006.
8. Chen, J. , "Overview of US Academic Research," in Nanotechnology: Science, Innovation, and Opportunity, ed. L.E. Foster, Prentice-Hall, 2005.

## d. Patents

1. C.C. Doumanidis, J. Chen, T. Ando and C. Rebholz, "Nanoheater Elements, Systems and Methods of thereof", PCT Application No. US/2007/017524 (filed on August 7, 2007);US Provisional Patent Application (filed August 7, 2006), University of Massachusetts,Lowell, *USA*.
2. Z. Gu, Q. Cui, and J. Chen, **"**Methods for the Preparation of Nickel Nano-shell Particles and Aluminum-Nickel Core-shell Nanoparticles and Their Applications", Provisional Patent filed, Spring 2009 (*CVIP Technology Development Fund award*)

3. R. Nagarajan, S. Balasubramaniam, J. Chen, and J. Mead, "Novel Low Temperature Processable Metallic Inks", Provisional Patent filed Spring 2009. (*CVIP Technology Development Fund award*)

## e. Invited Talks (without paper publication)

1. **Chen, J.,** "Forming of Textile Composites," Ecole Nationale Superieure D'arts & Metiers (Ensam-Paris), June **2001**.
2. **Chen, J**., "Substrate-Coating Interactions in Coated Fabrics," TechTextil Symposium, Atlanta, GA, March **2001**
3. Chen, J., "Faster, farther, stronger: composite materials and sports engineering," American Society for Mechanical Engineers, New England Section Meeting, Tuesday, March 21, **2000**
4. "Stamping of Structural Thermoplastic Composites," invited seminar, Northeastern Univ, February **2000.**
5. "Stamping, forming, and crushing -- the contribution of fiber architecture to the deformation and failure of composites", **Invited talk**, International Mechanical Engineering Conference and Exposition, Anaheim, CA, Nov 15-20, **1998.**
6. "Research in Composite Materials at the University of Massachusetts-Lowell," invited seminar, UMass-Dartmouth, October, **1998.**
7. "Acceptable Defects: The Relationship Between Processing, Fiber Architecture, and Composite Properties," NIST, Gaithersburg, MD, December 7, 1995 and Johns Hopkins University, Baltimore, MD, December 6, 1995.
8. "Effect of Fiber Architecture on Wrinkling During Forming of Textile Composites," GE Research and Development Center, Schenectady, NY, November 3, 1995.
9. "Fiber-fiber composites -- synthetic fiber reinforcement of paper," 1993 ESPRA Spring Meeting, Princeton, NJ, April 1993.

## e. Presentations and Posters

1. **Chen, J**., Lussier, D.S., Chow, S., and Bulusu, A., "Materials characterization issues for formability," NSF Workshop on Composite Sheet Forming, Lowell, MA, September **2001**.
2. **Chen, J**., Cao, J., and Sherwood, J.A., "Material Models for Simulation of Structural Composites Forming," Intl Conf on Composite Materials, ICCM13, Beijing, CHINA, July **2001**.
3. **Chen, J**., Lussier, D.S., Cao, J., and Peng, X., "Material behavior characterization of textile composite sheets: experiments and simulation," NSF Design and Manufacturing Research Conference, Tampa Bay, FL, January, **2001**
4. **Chen, J.,** Sherwood, J.A., Bulusu, A., Chow, S., Gorczyca, J.L., Buso, P.P., and Lussier, D.S., "Modeling of Co-mingled Glass/Thermoplastic Fabrics for Low Cost/High Volume Composites Manufacturing: Micro-Macro Modeling," NSF Design and Manufacturing Research Conference, Tampa Bay, FL, January, **2000**.
5. **Chen, J**., Sherwood, J.A., Buso, P.P., Gorczyca, J.L., Chow, S., Lussier, D.S., and Bulusu, A., "Textiles and Textile Composite Research at UML – 5 posters," The Fiber Society Fall 2000 Technical Conf, Callaway Gardens, GA, Nov 8-10, **2000**.

6. Cao, J., Peng, X., and **Chen, J**., "Material Characterization in Forming Structural Composites" Polytechnic University 100th Anniversary Conference: Technologies for the Next Century, **2000**.

7. **Chen, J**., Bulusu, A., Cao, J., and Peng, X., "Intelligent Material and Process Design for Stamping of Structural Composites: Fabric Modeling," NSF Design and Manufacturing Research Conference, Vancouver, BC, Canada, January 3-6, **2000**

8. **Chen, J.,** Sherwood, J.A., Buso, P., and Lussier, D., "Integrated Experimental/Numerical Analysis of Thermal Effects in Stamping of Co-mingled Glass/Thermoplastic Fabrics," NSF Design and Manufacturing Research Conference, Vancouver, BC, Canada, January 3-6, **2000**.

9. **Chen, J.**, Sherwood, J.A., and Cao, J., "High Volume Manufacturing of Structural Composites," Composites for the Next Millenium, A Symposium in Honor of Stephen W. Tsai on His 70th Birthday, Tours, France, July 2-3, **1999.**

10. **Chen, J**., and McBride, T.M., "Effect of yarn geometry on volume fraction evolution and wrinkling during composites forming," NSF Design and Manufacturing Grantees Conference, January, **1997**

11. McBride, T.M., and **Chen,J.**, "Yarn Geometry and Volume Fraction Evolution during Composites Forming," MD-Vol.74, Advanced Materials: Development, Characterization, Processing, and Mechanical Behavior (Book of Abstracts), ASME, 1996.

12. **Chen, J.**, McBride,T.M., and Prodromou,A.G., ``Modeling of Textile Structure Deformation for Composites Manufacturing", NSF Design and Manufacturing Grantees Conference, Albuquerque, NM, January 3-5, 1996.

13. **Chen, J.**, ``Conformability of Fiber Preforms -- The Effect of Tow Slippage", NSF Design and Manufacturing Grantees Conference, pp.397-398, San Diego, CA, January 4-6, 1995.

14. Wu,H.C., Seo,M., **Chen, J**., and Backer,S., ``Abrasion in Nylon and Polyester Ropes", Marine Technology Society Conference, Washington, DC, September 1994.

15. **Chen, J.**, and McBride, T.M., ``Localized Tow Slippage During Forming", International Conference on Composites Engineering, pp.87-88, New Orleans, LA, August 1994.

16. **Chen, J.**, Krauss,G.G., and Barbone,P.E., ``Ultrasonic NDE of 3D Textile Composites", Acoustical Society of America Conference, Cambridge, MA, June 1994.

17. **Chen, J.**, and McBride, T.M., ``Measurement of Unit Cell Slippage during Textile Composite Forming," TEXCOMP-2, International Conference on Textile Composites, Leuven, BELGIUM, May 1994.

18. **Chen, J.**, ``Conformability of Fiber Preform Architectures", NSF Design and Manufacturing Systems Grantees Conference, pp.521-522, Cambridge, MA, January 5-7, 1994.

19. Krauss,G.G., **Chen, J.,** Hinders,M.K., and Sandri,G.v.H., ``Ultrasonic Evaluation as Instructional Laboratory Experiments", NES/APS Meeting, April 2-3, 1993

20. Pan,N., **Chen, J.,** Seo.M., and Backer,S., ``Micromechanical Approach to Predicting the Tensile Response of a Bonded Hybrid Fibrous Structure Consisting of Two Different Types of Fibers under Uniaxial Loading", INDA Fundamental Research Conference, Raleigh, NC, July 1992.

21. **Chen, J.**and Backer,S., ``Experimental Measurement of Crack-Tip Strain Fields in Paper", Gordon Research Conference, New London, NH, July 1991.

22. **Chen, J**., Backer,S., and Pan,N., ``Contribution of Synthetic Fibers to the Toughness of Wet-laid Cellulose Papers/Nonwovens", 50th Anniversary Fiber Society Conference, Princeton, NJ, August 1990.

## f. Technical Reports:

1. Gorczyca,J., Chow, S., Sherwood, J.A., and **Chen, J**., "Finite Element Analysis and Materials Characterization for Hollow-Fiber Composite Material," Technical Report ACMTRL#00-01 for Innovative Membrane Systems, Norwood, MA, December **1999**.

2. **Chen,J**., and Hong,E., "Advanced Instrumentation of Drop Weight Impact Tower for Measurement of Energy Absorption and Crashworthiness," Technical Report ACMTRL#99-14a, #99-14b for the Joseph P. Healey Foundation and UML Research Foundation Seed Grant (Final Report), **1999**.

3. Chow,S., and **Chen,J.**, "High Temperature Constrained Creep Test," Technical Report ACMTRL#99-07 for Emerson and Cuming Composite Materials, Inc., Canton, MA, **1999**.

4. **Chen,J.,** Sherwood, J.A., Buso,P., Chow,S., and Lussier,D., "Stamping Research Report," Technical Reports ACMTRL#99-19 (**Fall 99**), #99-17 (**Summer 99**), #99-02 (**Spring 99**), #98-05 (**Fall 98**), #98-04 (**Sum 98**) for Ford Motor Company, Dearborn, MI.

5. Bulusu,A., and **Chen,J**., "High Temperature Water Immersion Creep Test," Technical Report ACMTRL#99-01 for Emerson and Cuming Composite Materials, Inc., Canton, MA, **1999**.

## D. INSTRUCTION RELATED ACTIVITY

### 1. Teaching (Courses taught, number of years, undergraduate-graduate levels, etc.)

#### a. Undergraduate Courses:

22.212 Mechanics of Materials (sophomore)
Spring 2000, 2001, 2002, 2006, 2008

22.296 Mechanical Behavior of Materials (sophomore)
Fall 1998, 1999, 2000, 2001, 2004, 2005, 2006

22.311 Applied Strength of Materials (junior)
Fall 1997, Spring 2007, Spring 2009

22.423 Senior Capstone Design (seniors, # groups)
Spring 1999 (1), Spring 2001 (1), Spring 2002 (2), Spring 2008 (4,1)

49.110 Future of Work (team taught)
Fall 2007

#### b. Graduate Courses:

22.478/578 Advanced Materials
Spring 2005, Spring 2009

22.596 Composite Materials
Fall 1998, Fall 1999, Spring 2001, Fall 2006, Fall 2007

22.697 Structural Applications of Composite
Spring 1998, Spring 1999, Spring 2000, Fall 2005, Fall 2008

22.519 Mechanical Behavior of Materials – New Materials (new course)
Fall 2000, Fall 2001

#### c. Courses Taught at Boston University:

Mechanics and Design of Advanced Composite Materials (graduate)
Plates and Shells (graduate)
Mechanics of Materials
Engineering Mechanics -- Statics and Dynamics
Engineering Mathematics
Polymer Processing -- directed study

1996 ASME Fundamentals of Engineering Review – created review materials and videotaped section on "Statics" for a series of review videotapes for the Fundamentals of Engineering exam. Passing the exam is the first requirement for becoming a registered Professional Engineer.

#### d. Teaching Awards:

2009 UML Student Government Association Exceeding Excellence in Teaching Award

2008 UMass Lowell Mechanical Engineering Departmental Teaching Award
2000 UML Engineering Student Council Outstanding Teacher Award
1999 UMass-Lowell Mechanical Engineering Departmental Teaching Award
1994 Boston University Engineering Professor of the Year

## 2. Other Activity and Accomplishments Related to the Instructional Function

### a. Graduate Students at University of Massachusetts Lowell:

#### 1. Primary thesis advisor:

| | | |
|---|---|---|
| In progress | Pelealuw | Thermal modeling and characterization of composite nanoheaters |
| In progress | Fitek, John | Dynamic response of composites |
| In progress | Patel, Shardul | Microchannel flow |
| 2008 | Farboodmanesh, Samira | Patterned electrospun nanofibers for tissue scaffolds (PhD ME) [Tufts Univ postdoc] |
| 2008 | Jogdand, Harshawardhan | Thermal and microstructural characterization of nanoheaters (MSME) [Hypertherm] |
| 2005 | Liu, Lu | Formability of structural thermoplastic textile composites (D.Eng, ME) [Spaulding Composites] |
| 2003 | Bunyan, Navin | Control of deposition and orientation of electrospun fibers (MSME) [HP] |
| 2003 | Farboodmanesh, Samira | Substrate-coating interactions in shear of coated fabrics (MSME) [UML PhD program] |
| 2002 | Chow, Samuel | Frictional interaction between blank holder and fabric in stamping of woven thermoplastic composites (MSME) [Intrinsic Therapeutics] |
| 2002 | Lussier, Darin | Thermal effects in stamping of thermoplastic composites (MSME) [Pratt&Whitney] |
| 2001 | Bulusu, Anuradha | Modeling of architecture and deformation of dry woven fabrics during shear (MSME) [Univ of Texas, Arlington, PhD program] |
| 2001 | DaSilva, Robert | Characterization and model development of non-embedded linear braided textile structures (MSME) [Pratt&Whitney] |
| 2000 | King, Michael | Fatigue behavior of tapered sandwich composites (MSME) [Kazak Composites] |
| 1999 | Hong, Eugene | Energy absorption of composite sandwich structures during low-velocity impact (MSME) [Quality Engineering Associates) |
| 1998 | Krauss, Gordon G. | Ultrasonic NDE of bonded composite structures (PhD, ME, Boston Univ) [Ford Motor Co.] |
| 1997 | McBride, Timothy M. | The large deformation behavior of woven fabric and microstructural evolution in formed textile composites (PhD, ME, Boston Univ) [Texas Instruments] |

#### 2. Thesis committee member:

| | | |
|---|---|---|
| In progress | White, Kari | Composite sandwich panel attachment failure (MSME) |
| 2007 | Gravelle, Nathan | Critical Comparison of Steel and Composite Beams in a Side Impact using Finite Element and Experimental Analysis (MSME) |
| 2007 | Gamache, Lisa | Design of a Self-Contained Test Apparatus for the Characterization of Fabric Friction during the Thermostamping Process (MSME) |
| 2005 | Li, Xiang | Materal characteristics of woven-fabric composites and finite element analysis of the thermostamping process (D.Eng ME) |
| 2004 | Gorczyca, Jennifer | A study of the frictional behavior of a plain-weave fabric during the thermostamping process (D.Eng, ME) |
| 2005 | Tao, Zhenhong | Failure studies on rubber and rubber composities (D.Eng. PL) |
| 2005 | Wei, Ming | Phase morphology control in electrospun nanofibers from the electrospinning of polymer blends (D.Eng, PL) |
| 2002 | Suwapaet, Nuchida | Design for Reliability,: Remote Communication System Using Solar Power (MSME) |
| 2001 | Buso, Patricia | Finite Element Modeling of Co-Mingled Glass/Thermoplastic Fabrics for Low-Cost/High-Volume Composites Manufacturing (MSME) |
| 2001 | Shetty, Malar Rohith | (co-advisor with Prof Steve McCarthy) [Nypro] |
| 2000 | Gorczyca, Jennifer | Applications of CAE and the Finite Element Method for Automobile Door Design (MSME) |
| 1999 | Palmer, Chris | Tactile pressure sensors technology applications to geotechnical engineering |
| 1997 | Rocca, Derek | Application of state variable modeling and nonlinear finite element analysis to the impact of steel projectiles into thin polycarbonate lenses |

**4. Undergraduate Research**

| | | |
|---|---|---|
| 2008- | Rondeau, Nichole | Nanoheaters |
| 2008- | Radik, Zeke | Nanoheaters |
| 2008 | Phamduy, PaulNanoheaters | |
| 2008- | Winchester, David | Composite forming |
| 2007-2008 | Pelealuw, Jacqueline | Electrospinning (BS/MS student in Composites) |
| 2007-2008 | Cloutier, David | Nanoheaters (BS/MS student in Vibrations) |
| 2005-2007 | Mooskian, John | Electrospinning (Portsmouth Naval Yard) |
| 2005-2007 | Cushman, Jamie | Braiding of blood vessels (GE) |
| 2001-2002 | Stevens, Kari | Shear behavior in coated fabrics (BS/MS student) |
| 2002-2003 | Morand, Chris | Automated, mechanized loom (Mentis Sciences) |
| 2000-2001 | Paquin, Brad | Composite impact and fracture ( |
| 2000-2001 | Wong, Siak Keong | Mechanical properties of coated fabrics |
| 2000-2001 | Seaver, Marc | Thermal conductivity |
| 1999-2000 | Creamer, Clayton | Creep and fatigue of composites |
| 1999-2001 | Seo, Min-Chul | Impact response of a polymer compound |
| 1999 | Griffiss, Bobby | Design of a temperature control chamber |
| 1998-1999 | Lussier, Darin | Stress analysis of complex structures using photostress techniques (Francis Scholar, BS/MS student) |

1998-1999 Chow, Samuel Thermoplastic stamping (Francis Scholar, BS/MS student)

**b. Graduate Students at Boston University:**

**1. Master of Science Degree:** (employer after graduation listed in parentheses)

| | | |
|---|---|---|
| 1997 | Pratibha Sinha (Parametric Technology) | Finite element simulation of wrinkling during in-plane shearing of woven fabrics |
| 1997 | Mayur A. Tilak (Silicon Valley Group) | Analysis of a material model for finite element modeling of shear deformation in fabrics |
| 1997 | Paul R. Viens (Dynamics Research Corp) | An optimization tool for the packing of folding space structures |
| 1995 | Andreas G. Prodromou (PhD, Univ of Leuven, Belgium) | Geometric effects on conformance of textile composite preforms |
| 1994 | Richard A. Moro (Draper Labs) | A systematic approach to design for assembly:feature based design and tolerancing |
| 1992 | Stacey D. Chinn (GE, UChicago Business) | The effect of previous drying on recycled paper fibers |

## E. SERVICE ACTIVITIES

Department:

- Department Seminar Coordinator (established, Spring 2000)
  Responsible for identifying and inviting external and internal experts to present seminars on important research areas, as well as on their experiences as engineers.

- Department Graduate Admissions Committee (1997-present)
  Responsible for evaluation of incoming applications to the graduate program and identification of candidates for research and teaching assistantships.

- Undergraduate Advisor (1997-present)
  Advise over 20 undergraduate students with regard to course registration and other administrative matters. Routinely encourage students to take part in either research at the university or engineering positions at local companies.

University:

- Co-Chair, Strategic Planning 2020, Committee on Research, Scholarship, and Creative Work
- Co-Chair, Provost Search Committee (2007-8)
- Committee Member, Chancellor Search Committee (2006-7)
- Emerging Technologies and Innovation Center Committee
- Co-Director of the Advanced Composite Materials and Textile Research Lab (ACMTRL)
  As Co-Director of ACMTRL (with Jim Sherwood), I oversee an *annual* budget of well over $350,000 in external research funding. This currently supports 6 graduate students (5 full-time RA's and 1 half-time RA) and 2 undergraduate students. Through existing resources, industry donations, and research funding, we have built up the laboratory's instrumentation and equipment for materials fabrication, characterization, and testing. The laboratory also has strong capabilities in computer analysis and modeling.

- Tau Beta Pi, Engineering Honor Society, Faculty Advisor (1997-2001)
  Guided undergraduates in organizing initiation ceremony and coordinating society administrative matters. This student organization is in the process of strengthening its visibility and its service to the community. Kari Stevens, the 2001-2 president of the UML chapter, was awarded one of the National Tau Beta Pi Scholarships.

- Task Force Co-Chair, Campus Climate, Council on Diversity and Pluralism (1997-2001)
  Guided graduate students in organizing a Public Speaking/Toastmasters Club to improve skills in technical presentations, teaching assistant roles, and professional interaction.
  Co-organized TA Workshop (Sept 2001) to provide graduate students with an introduction to the classroom – cultural issues, teaching/learning styles, stress/time management, grading, etc.

Community:

- Museum of Science Seminar (February 4, 1999)
  Presented seminar on "faster, farther, stronger: composite materials and sports engineering", as part of the museum's High School Science Series.

- American Textile History Museum
  Gave museum directors a tour of the UML Advanced Composite Materials and Textile Research Laboratory and discussed possible areas of collaboration. Contributed information and resources to the museums for their informational video and a future exhibit.

- Interaction with K-12 students

  - Women in Science and Engineering Steering Committee
    Invited several female engineers to present workshops to $7^{th}$ and $8^{th}$ grade girls. Helped with registration and student flow on the event day.

  - JETS National Engineering Design Competition Judge
    Evaluated low cost, portable shelters designed and constructed by students from several regional high schools.

  - Developed and videotaped distance learning vignette ("Planes, Trains, Automobiles, and Your Shirt: what do they have in common?" for high school cable program (Spring 1998).

  - Speaker in math/science class at Lowell High School (1998) (have also visited several other middle and high schools prior to 1997).