

DR. BEVERLY K. JAEGER
CURRENT CURRICULUM VITAE

➤ **Date of CV: 1 February 2012**

➤ **Sections Included**

- Education
- Work Experience
- Specialized Training & Professional Development
- Grant Activity
 - External: National Science Foundation
 - Internal: Undergraduate Research Grants
- Scholarship and Research
 - Submissions and Publications
 - Technical Presentations and Research Dissemination
 - Book Chapters, Engineering Projects, Creative Productivity, and Research Initiatives
- Web Sites and Language Competencies
- Teaching and Advising
 - Teaching Record: Overview of Coursework
 - Advising and Supervision of Undergraduate Students
 - Consulting with and Supervision of Graduate Students
- Service and Professional Development
 - Service and Activities within Mechanical and Industrial Engineering Department
 - Service and Activities within the College of Engineering
 - Service and Activities within Northeastern University
 - Conferences, Seminars, and Professional Activities Outside Northeastern University
 - Documents Reviewed for Publication: Textbooks and Scholarly Work Evaluated
 - Community Service Outside Northeastern University
 - Memberships and Affiliations
- Rewards of Teaching at Northeastern University
 - Recognition, Awards, Nominations, and Opportunities
 - Highlights of Student-Related Mentoring Activities

~ EDUCATION ~

- **Northeastern University:** Boston, MA
 - PhD in Mechanical/Industrial Engineering Program, QPA: 3.82
 - Concentration in Human-Machine Systems and Simulation, Minor in Cognitive Psychology

 - Master of Science in Biomechanics, QPA: 3.81
 - Boston-Bouvé College of Human Development Professions
 - Concentration in Kinesiology, Specialty in Neuromuscular Physiology

- **Stonehill College:** Easton, MA
 - Certificate, Computer Information Systems Program
 - Concentration in procedural programming constructs

- **Bridgewater College:** Bridgewater, MA
 - Bachelor of Science in Cardiopulmonary Science, QPA: 3.93
 - Physiology Concentration, Minor in Health Administration

~ WORK EXPERIENCE ~

- **Northeastern University, Boston, MA**
 - Full-Time Faculty, Mechanical and Industrial Engineering, 2012–present***
 - Teach and develop courses for Industrial and Mechanical Engineering majors
 - Conduct Digital Simulation, Facilities Planning, Human-Machine Systems Courses
 - Oversee Intensive Writing Component and Laboratories for Senior-level course
 - Advise and consult with Industrial and Mechanical Senior Capstone Design Teams
 - Conduct outreach for Mechanical and Industrial Engineering recruitment
 - Serve on Mechanical and Industrial Engineering Departmental Committees

 - Full-Time Faculty, College of Engineering Gateway Faculty, 2001–2011***
 - Instructed Engineering Problem Solving with Computer Applications and Computation
 - Taught MATLAB®, Microsoft® Excel, and Visual C++ for engineers; lectures and laboratories
 - Developed and conducted seminar courses following students' Engineering Co-op Experiences
 - Taught and further developed Engineering Design course, overseeing portions in team setting
 - Served as faculty mentor and engineering consultant in Introduction to the Study of Engineering
 - Work with other Gateway Faculty and First-year instructors to coordinate and oversee courses

- **The TASA Group, Inc., Forensic Expert Consultant: Blue Bell, PA & United Kingdom, 2007–present**
 - Retained as a subject matter expert in Human-Machine Systems, work activity is case-driven
 - Conduct research, discovery, analysis, and render opinions on legal matters in areas of expertise
 - Investigate cases, conduct scientific research and statistical analyses; generate technical reports
 - Provide expert testimony in depositions, mediation, arbitration and/or courtroom trials

- **ARCCA, Incorporated, Forensic Engineer: Boston, MA and Penn's Park, PA, 2002–present**
 - Retained as a subject matter expert in Biomechanical Engineering, work activity is case-driven
 - Conduct research, discovery, analysis, and render opinions on legal matters in areas of expertise
 - Investigate cases, conduct scientific research and statistical analyses; generate technical reports
 - Provide expert testimony in depositions, mediation, arbitration and/or courtroom trials

- **Human Factors Engineering Usability Liaison: The MathWorks Company, Spring 2010**
 - Worked with Usability and Software Development Experts for evaluation and ongoing design of online MATLAB User Interface for students in Engineering Problem Solving and Computation
 - Implemented/beta-tested new web portal interface with MathWorks experts consisting of regular in-person meetings, site visits to NU, web meetings, and ongoing correspondence

- **Standardized Patient Work: Harper Global, June 2009→ as needed**
 - Served as a (paid) trained simulated patient in acting role for medical research purposes
 - Filmed and observed by independent research firm to study physicians' management of neurological conditions
 - Required to memorize and personify a patient profile in terms of demeanor, symptomology, health status, and medication

- **Essential Teaching Seminar: Professional Faculty Mentor, ASME, 2006–as needed**
 - Contracted with American Society of Mechanical Engineers as needed for teaching seminars
 - Recruited by Essential Teaching Program Directors following participation in training at MIT
 - Film, evaluate, and advise engineering faculty on teaching techniques as an assigned mentor
 - University of California San Luis Obispo, September 2007
 - Drexel University, Philadelphia, PA, September 2006

- **Bose Media Systems Incorporated: Usability Evaluator, Stow, MA 2008–2009**
 - Contracted as a User Interface Design Expert for Bose® in-vehicle media system evaluation
 - Conduct Expert evaluations on usability and functionality of Bose® factory-installed systems

- **C.P.U. Computer Productivity and Usability & Human Factors Design, Consulting, 2000–present**
 - Work activity is case-driven and site-specific
 - Evaluated and consulted on computer interface design of on-line system for application in professional tournaments by certified umpires in United States Tennis Association
 - Consulted on and evaluated design of scoring system device and interface for US Open umpires
 - Conducted computer training for novice and intermediate users and small business applications
 - Consulted on design of chair umpire computer docking station and seating at International Tennis Center in Flushing Meadows, New York for United States Tennis Association
 - Consulted with Building Commissioner on interpretation and enforcement of land dimension by-laws for residential construction compliance; presented report to the Planning Board

➤ **Northeastern University, Boston, MA (continued)**

Lecturer and Instructor, Department of Mechanical and Industrial Engineering, 1997–2001

Support Faculty, Department of Mechanical and Industrial Engineering, 2001–2011

- Designed and developed Human-Machines Systems Laboratory facilities and Human-Machine Systems course, with activities, experiments, laboratory manuals, journals, and seminars
- Taught Digital Simulation Techniques using SIMAN & ARENA Simulation Modeling Language, redesigned course with strong laboratory and hands-on component, and seminars
- Redesigned and instructed Design and Analysis of Computers and Information Systems course
- Redesigned and redeveloped Facilities Planning and Material Handling Course Systems with software, laboratories, and hands-on projects

Research Associate & Associate Director, Virtual Environments (VE) Laboratory, 1995–present

Department of Mechanical, Industrial and Manufacturing Engineering

- Advise graduate student lab members on research, human subjects, and experimental design
- Meet and consult with VE lab visitors and prospective project collaborators and funding sources
- Develop 3-Dimensional models of artifacts, buildings, systems, and real-world settings
- Designed experimental methodology and evaluation protocols for VE testing and research
- Conducted testing, data collection, and analyses for simulator studies on driving response
- Designed and constructed locomotion simulator with dynamic interface and immersive VE
- Conducted testing and analyses for efficacy of simulator training for Department of Defense

Industrial Design Engineer, Department of Mechanical and Industrial Engineering, 1997–as needed

- Designed workspace layout for 2 Human-Machine Systems and Quality Assurance Laboratories
- Designed -with a team- Collaborative Computing Conference Room for MIE Faculty and Students
- Supervised portions of renovation and reconstruction phases with utility subcontractors
- Helped configure work environment including furniture and computer system components

Lecturer and Instructor, Bouvé College of Pharmacy and Health Sciences Faculty, 1991– 1997

Departments of Physical Therapy and Cardiopulmonary Science

- Instructed in Clinical Gross Anatomy, Clinical Kinesiology, Neuroanatomy, and Biostatistics
- Designed / Developed Packets for Biomechanics & Orthopaedic Modules of Clinical Kinesiology
- Directed Honors Adjuncts for Clinical Kinesiology in Electromyography, Medical Devices, and Instrumentation Research

➤ **Reebok International: Stoughton, MA**

Research Engineer Intern, Biomechanics Laboratory, 1994-1995

- Worked in Research, Design, and Development Division
- Conducted Research in Functional Product Testing Program for Reebok® and Rockport® footwear
- Used force plate, infrared timing systems, and other instrumentation for biomechanical research
- Trained on Labview® Statistical Analysis Programming Software
- Generated and presented technical reports on research results

➤ **United States Tennis Association (USTA), NY & International Tennis Federation (ITF), England**

Professional Umpire: International Chair Umpire, Line Umpire, Referee, and Chief of Officials

- Officiated Professional, National, International, Collegiate, Junior and Amateur events
- Selected for and officiated Olympics in Atlanta, USA, 1996; Sydney, AUS, 2000; Beijing, CHN 2008
- Officiated Australian Open, French Open, U.S. Open, Wimbledon, Mexican Open, Canadian Open, Davis Cup, and Fed Cup as chair umpire and/or line umpire; hold international officiating badge
- Designed and conducted classroom, practical training, and evaluation seminars for new officials
- Selected as a National Mentor for United States, have undergone Diversity and Mentoring training
- Executive member of National Officials Inclusion Council for Diversity and Inclusive Excellence
- Served as Director-at-Large and Vice President for New England Tennis Umpires Association, Director of Certification, New Member Coordinator, Chairperson and Member of Nominating Committees

Training Consultant/Mentor for USTA Officiating Program (2011)

- Travel to venues around United States to conduct classroom sessions on Officiating Techniques
- Conducted on- and off-court training and feedback sessions to prepare professional tennis officials

~ SPECIALIZED TRAINING & PROFESSIONAL DEVELOPMENT ~

➤ **Writing Intensive Workshop, June 2011**

- University-wide workshop for all individuals involved with writing evaluation at NU
- Received assistance and worked with others to continue to improve quality of writing at NU

➤ **TurningPoint Classroom Response System and Results Manager Best Practices, January 2011**

- Training Seminar offered by Turning Technologies for using Classroom Response Systems
- On-line session #482786580 outlined innovative methods to improve engagement and evaluation

➤ **Demystifying Daubert: Daubert's Effect on your Work as an Expert Witness, August 2010**

- Seminar offered by Technical Advisory Services of America, Live on-line, visual, audio, interactive
- Outlined critical elements of Daubert rulings and requirements for expert witness testimony

➤ **Living with the Lab Workshop, Louisiana Tech, July 2009**

- Selected to attend multi-day academy on experiential learning for multidisciplinary engineering
- Faculty participants built and programmed robots to illustrate hands-on teaching concepts
- Participated in sessions to consider and pioneer the future of engineering education
- Project supported by the National Science Foundation's Course Curriculum and Laboratory Improvement (CCLI) Program under Award No. 0618288.

➤ **Simulation with Arena and ProModel, June 2009**

- Workshop on how to make decisions in relation to simulating with different software packages
- Attended at American Society for Engineering Education, Austin, Texas

➤ **Human Subjects Training, January 2009**

- Certification training conducted for the protection of Human Subjects, Certification #128432
- Conducted through Office of Human Research Protections, Dept. of Health & Human Services

➤ **Test Prep Instructor Training for College Entrance Exam, Chyten Educational Services, July 2007**

- Training Seminars on ACT exam covering all portions of the test: English, Math, Reading, Science
- Sessions also focus on study skills, homework strategies, and orientation to test prep training

- **Forensic Analysis of Medical Records in Injury Biomechanics & Accident Reconstruction, Oct 2006**
 - Two-day seminar at Society of Automotive Engineers Headquarters in Troy, Michigan
 - Focuses on interpreting emergency, medical, health, and law enforcement records
- **Essential Teaching Seminar, Massachusetts Institute of Technology: Cambridge MA, June 2006**
 - Sponsored by American Society of Mechanical Engineers (ASME)
 - Three-day seminar offered for primarily Mechanical Engineering faculty
 - Involved being filmed and evaluated by engineering faculty and professional teaching mentors
 - Presentation, application, and evaluation of learning fundamentals and teaching in engineering
- **Developing and Deploying Bioinformatics Applications with Matlab: Boston MA, April 2005**
 - Seminar on leveraging the MATLAB software environment to streamline information processing
 - Addressed research, data analysis, visualization, and algorithm development and deployment
- **Society of Automotive Engineers: Motor Vehicle Accident Reconstruction: Detroit MI, March 2004**
 - Full 3-day seminar on forensic aspects of motor vehicle accident investigation
 - Learned techniques of collision analysis, force and vector calculations, and artifact evaluation
 - Applied as continuing education for Society of Automotive Engineers
- **Excellence in Civil Engineering Education Program (ExCEED): West Point NY, August 2003**
 - Selected as one of 24 attendees to participate in intensive workshop at West Point Military Academy for week-long program and practicum on all facets of effective engineering education
 - Nominated and sponsored by NU Dean of Undergraduate Education and College of Engineering
 - Involved being filmed and evaluated by military engineering faculty and professional mentors
- **SEAK National Expert Witness Conference, Legal & Technical Training: Hyannis MA, June 2003**
 - Full 2-day seminar on expert witness training
 - Participated in workshops on legal issues and technical report composition
 - Applied as continuing education for forensic work in biomechanical engineering

~ GRANT ACTIVITY ~

- **External: Awarded, National Science Foundation**
 - **Title:** IDR: Collaborative Activities in TS Processing and Volcanology
 - **Total Funding:** \$292,000, **Award Dates:** 8/01/10 – 7/31/13
 - **PI:** Andrew Gouldstone, Mechanical Engineering
 - **Jaeger Role:** Director of Educational Outreach, Research and Assessment (25 %)
 - **Collaboration with:** Rice University

 - **Title:** Critical Design Criteria to Accommodate Hand Disorders: An Interdisciplinary Approach
 - **Total Funding:** \$300,000, **Award Dates:** 4/01/11 – 3/31/14
 - **PI:** Rifat Sipahi, Andrew Gouldstone, Beverly K Jaeger, Mechanical Engineering
 - **Jaeger Role:** Co-PI, Director of Educational Outreach, Human Subjects Research (33 %)
 - **Collaboration with:** Neurology Physician, Boston Medical Center

➤ **Internal: Awarded, Northeastern University Undergraduate Research Grants with/for Students**

- **2011:** \$1,000 Lexi Hamsmith, Jordan Rubio ChE '15, Peter DeVinne CompE, '15, U/G Researchers
 - Engineering design research to develop devices for services dogs and human partners
- **2011:** \$1,000 Duy Le, ChE '15, Anthony Maiorano & Joseph Zimo, ME '15, U/G Researchers
 - Engineering design research to develop devices for services dogs and human partners
- **2010:** \$1,000 Corey Balint, IE '11, Research on Quality Managers in U/G Education
 - ASEE 2010 conference attendance, paper presentation and publication
- **2010:** \$1,000 Chris Wishon, IE '11, Research on Quality Managers in U/G Education
 - ASEE 2010 conference attendance, paper presentation and publication
- **2009:** \$1,000 Ivan Goryachev, ME '12, Design of Dermatological Medical Device
 - For research, design, development, and construction of medical device prototype
- **2009:** \$1,000 Matt Van Dyke, ME '12, Design of Dermatological Medical Device
 - For research, design, development, and construction of medical device prototype
- **2009:** \$1,000 Ethan LaRochelle, EE '09, Research on Spectrum of Service Learning Effects
 - ASEE 2009 conference attendance, paper presentation and publication
- **2009:** \$1,000 Emily Shay, IE '09, Human Factors Analysis of Dermatological Devices
 - For research, usability analysis and data collection for design proposal
- **2008:** \$1,000 Ethan LaRochelle, EE '09, National Research on Engineers Without Borders
 - EWB 2008 conference attendance, presentation, networking and data collection
- **2008:** \$1,000 Brittany Damon, IE '08, Educational effects of various classroom teaching styles
 - For ASEE 2008 conference attendance, paper presentation and publication
- **2007:** \$1,000 Jason Turcotte, ECE '11, Design of and Research on an Electronic Educational Game
 - For materials to develop, test, and construct an educational gaming device

SCHOLARSHIP AND RESEARCH

~ **PUBLICATIONS AND PRESENTATIONS** ~

*Undergraduate Students, ‡Graduate Students

➤ **Publication Abstracts and Proposals Submitted**

Jaeger, BK, with Freeman, S (Coordinators, Northeastern University), Estell, J (Ohio Northern), Moor, SS (Purdue University Fort Wayne), & Whalen, R (Northeastern) (2011 for 2012) *"Tuning up Teaching: Methods to make courses better for your students and more manageable for you."* Workshop Proposal to American Society for Engineering Education Annual Conference, Vancouver, BC, Canada. Approved and Sponsored by First-year Programs Division and New Engineering Educators, ASEE.

Jaeger, BK, & Freeman, S Whalen, R, (2011 for 2012). Programming is Invisible –or is it? How to Bring a First-year Programming Course to Life. *American Society for Engineering Education* for Annual Conference, San Antonio, TX.

➤ **Papers & Proceedings**

Whalen, R, Jaeger, BK, & Freeman, S (2011). R U All There? Texting, Surfing, and E-Tasking in the Classroom and its Effects on Learning. *American Society for Engineering Education* for Annual Conference, Vancouver, BC, Canada.

- Freeman, SF, Forman, S, Whalen, R, & Jaeger B (2011). Service Learning vs. Learning Service in Engineering Design. *American Society for Engineering Education* for Annual Conference, Vancouver, BC, Canada.
- Jaeger, BK, Freeman, SF, Whalen, R, & Payne, R* (2010). Successful Students: Smart or Tough?. *Proceedings of the American Society for Engineering Education, Louisville, KY.*
- Jaeger, BK, Fritze, CM, Wishon, C*, & Balint, C* (2010). ATLAS - Academic Teaching and Learning Assistants Study: The Use of Peers as 'Quality Managers' in Engineering Class Instruction. *Proceedings of the American Society for Engineering Education, Louisville, KY.*
- Jaeger, BK, & LaRochelle, EPM* (2009). EWB²: Engineers Without Borders: Educationally a World of Benefits. *Proceedings of the American Society for Engineering Education, Austin, TX*
- Freeman, SF, Jaeger, BK, & Whalen, R (2009). When the Light Goes On: Illuminating the Pathway to Engineering. *Proceedings of the American Society for Engineering Education, Austin, TX*
- Mourant, RR, Gundewadi, N[†], Yin, Z[‡], & Jaeger, BK (2008). A New Measure to Evaluate Left Turns of Novice Drivers. *Proceedings of the Human Factors and Ergonomics Society 52nd Annual Meeting.*
- Jaeger, BK, Bates, M, Damon, BN*, & Reppy, A* (2008). Tipping the Scales: Finding the Most Effective Balance Between Traditional Lecture and Active Learning Across Academic Levels in Engineering. *Proceedings of the American Society for Engineering Education, Pittsburgh, PA.*
- Whalen, R, Freeman, SF, & Jaeger, BK (2008). Agile Education: What We Thought We Knew About our Classes, What We Learned, and What We Did About It. *Proceedings of the American Society for Engineering Education, Pittsburgh, PA.*
- Jaeger, BK, Whalen, R, & Freeman, S (2007). Do They Like What They Learn, Do They Learn What They Like –And What Do We Do About It? *Proceedings of the American Society for Engineering Education, Honolulu, HI.*
- Mourant, RR, Jaeger, BK, & Lin, Y (2007). Optic Flow in Driving Simulators. *Proceeding of the Driving Simulation Conference of North America, Iowa City, IA.*
- Estell, J, Jaeger, BK, Whalen, R, Freeman, S & Yoder, JD (2007). Tower of Straws: Reaching New Heights with Active Learning in Engineering Design for the First-year Curriculum. *Proceedings of the American Society for Engineering Education, Honolulu, HI.*
- Yoder, JD, Jaeger, BK & Estell, J (2007). The One-Minute Engineer, Nth Generation: Expansion to a Small Private University. *Proceedings of the American Society for Engineering Education, Honolulu, HI.*
- Mourant, RR, Ahmad, N[†], Jaeger, BK, & Lin, Y (2007). Optic Flow and Geometric Field of View in a Driving Simulator Display." *Displays, April: 28, 145-149.*
- Mourant, RR, Rengarajan, P, Cox, D, Lin, Y, & Jaeger, BK (2007). The Effect of Driving Environments on Simulator Sickness. *Proceedings of The Human Factors and Ergonomics Society 51st Annual Meeting.*

- Brown, S*, Vacca, K*, Reisberg, R., Maheswaran, B, & Jaeger, BK (2006). Freshman Physics Program to Support Women in Engineering. *Proceedings of the American Society for Engineering Education, New England Division, Chicago, IL.*
- Jaeger, BK & Bilén S (2006). The One-Minute Engineer: Getting Design Class out of the Starting Blocks. *Proceedings of the American Society for Engineering Education, Chicago, IL.*
- Freeman, S, Whalen, R & Jaeger, BK (2006). Active Teaching, Active Learning: Infusing the Design Process in a First-Year Course. *Proceedings of the American Society for Engineering Education, Chicago, IL.*
- Yang, G[‡], Jaeger, BK, & Mourant, RR (2006). Driving Performance of Novice and Experience Drivers in Lane-Change Scenarios. *Proceedings of the Human Factors and Ergonomics Society 50th Annual Meeting.*
- Mourant, RR, Ahmad, N[‡], Adetiloye, C[‡], & Jaeger, BK (2006). Optical Flow, Geometric Field of View, and Requested Vehicle Velocity. *Proceedings of the Third Symposium on Applied Perception in Graphics and Visualization, Boston, MA, July. Applied Perceptions in Graphics and Visualization.*
- Jaeger, BK, Freeman, S, & Whalen, R (2005). Get with the program: Integrated Project Instead of a Comprehensive Final Exam in a First Programming Course. *Proceedings of the American Society for Engineering Education, Portland, OR.*
- Aburdene, M, Jaeger, B, & Freeman, S (2005). Empty-handed Demonstrations in Engineering: Think Inside the Box. *Proceedings of the American Society for Engineering Education, Portland, OR.*
- Whalen, R, Freeman, S, Jaeger, BK, & Maheswaran, B (2005). Teamwork is Academic: The Gateway Approach to Teaching Engineering Freshman. *Proceedings of the American Society for Engineering Education, Portland, OR.*
- Yang, G[‡], Baniahmad, F[‡], Jaeger, BK, & Mourant, RR (2004). A Solution to the Rear-vision Problem in a Fixed-Based Driving Simulator. *Proceedings of The Human Factors and Ergonomics Society 48th Annual Meeting.*
- Mourant, RR & Jaeger, BK (2004). An Overview of Simulator Sickness in Fixed-Based Driving simulators. *NAVAIR Orlando TSD Simulator Sickness Symposium, Orlando, FL.*
- Jaeger, BK (2004). Incremental Skill Development: Public Speaking and Technical Presentation in Engineering Design. *Proceedings of the American Society for Engineering Education, New England Division.*
- Jaeger, BK, Freeman, SF, & Brougham JC (2004). No Rockets, No Robots: Low Tech-Engineering Design Education with Credibility and Success. *Proceedings of the American Society for Engineering Education, Salt Lake City, UT.*
- Mourant, RR, Jaeger, BK, & Gergiso, T[‡] (2004). Display Configuration and Simulator Sickness. *Annual Meeting of The Transportation Research Board. Washington, D.C.*
- Freeman, SF, Jaeger BK & Brougham, JC (2003). More Learning and Less Anxiety in a First Programming Course. *Proceedings of the American Society for Engineering Education, Nashville, TN.*

Mourant, RR & Jaeger, BK (2003). Driving Scenarios for Virtual Assessment. *International Workshop on Virtual Rehabilitation, Rutgers, NY.*

Mourant, RR, Tsai, F[‡], Al-Shihabi, T[‡], & Jaeger, BK (2001). Measuring the Divided Attention Capability of Young and Older Drivers. *Proceedings of The 80th Annual Meeting of the Transportation Research Board*, 1-17.

Jaeger, BK & Mourant RR (2001). Comparison of Simulator Sickness Using a Static and Dynamic Walking Simulator. *Proceedings of The Human Factors and Ergonomics Society 45th Annual Meeting*, 1896-1900.

Mourant, RR, Tsai, F[‡], Al-Shihabi, T[‡], & Jaeger, BK (2000). Divided Attention Ability of Young and Older Drivers. *National Highway Traffic Safety Internet Forum*, 1-11.

Jaeger, BK (1998). The Effects of Training and Visual Detail on Accuracy of Movement Production in Virtual and Real-World Environments. *Proceedings of The Human Factors and Ergonomics Society 42nd Annual Meeting*, 1486-1490.

Jaeger, BK[‡], Tanaka, S[‡], & Chiu, S[‡] (1997). Spatial Imaging in Virtual Environments: Computing, Rendering, and Interfacing Considerations. *Boston Computer Society Conference*. Representing Virtual and Simulated Environments Computing Association.

➤ **Technical Presentations and Research Dissemination**

Jaeger, BK (Coordinator, Northeastern University) with Estell, J (Ohio Northern), Freeman, S (Northeastern), Moor, SS (Purdue University Fort Wayne), & Whalen, R (Northeastern) (2011) "I Hadn't Thought of Doing THAT" - Sharing Best & Unique Practices in the Classroom" *Workshop Proposal to American Society for Engineering Education Annual Conference*, Vancouver, BC, Canada. Approved and Sponsored by First-year Programs Division, ASEE.

Chen, N[‡], Chitnis, T[‡], Jaeger, BK, & Mourant, RR (2010). A Game to Train Drivers in Hazard Detection. *IEEE Virtual Reality, 2010. Research Demo*. Also presented as a Project and Poster Presentation, *Northeastern University Research and Scholarship Exposition*.

Jaeger, BK, Bates, M, Damon, BN^{*}, & Reppy, A^{*} (2008). Finding the Effective Balance Between Traditional Lecture and Active Learning Across Academic Levels in Engineering. *Research Project and Poster Presentation, Northeastern University Research and Scholarship Exposition*.

Seitz, K^{*}, Whalen, M^{*}, & Jaeger, BK (2008). Assessment of Cognitive Workload, Perceptions, and Effects of the use of Mobile Phones while Driving. *Research Project and Poster Presentation, Northeastern University Research and Scholarship Exposition*. Also presented at University-wide Honors Banquet in April 2006.

Jaeger, BK, Rumberger, E^{*}, & Dennerlein, T^{*} (2007). Engineers Without Borders: Service Learning at NU and Beyond. *Research Project and Poster Presentation, Northeastern University Research and Scholarship Exposition*.

Jaeger, BK & Freeman, SF, with Abbamonto, C^{*}, Bowman, C^{*}, Durfee, E^{*}, and Hoey, M^{*} (2006). Team Extreme: Pair programming Leverages the Power of Two Minds, *Women in Science and Engineering Exposition, Northeastern University, Research Poster Presentation*.

- Jenkins, M^{*}, Kemp, E^{*}, & Jaeger, BK (2006). Engineering a Better Tomorrow One Person at Time. *Research and Scholarship Exposition, Northeastern University, Research Poster Presentation*. Also presented at University-wide Honors Banquet in April 2006.
- Jaeger, B (2005). Engineering Presentations: It Can be Done. *Scholarship of Teaching and Learning Publication, Center for Effective University Teaching, Northeastern University*.
- Freeman, S & Jaeger, BK (2005). Pair Programming Applied Successfully in a First Programming Course. *Scholarship of Teaching and Learning Publication, Center for Effective University Teaching, Northeastern University*. Also presented as a Research Poster at the *Scholarship of Teaching and Learning Symposium*.
- Bosecker, C^{*}, Hussain, A^{*}, & Jaeger, BK (2005). Cell phones or Sell Phones? Engineering a Better Interface through User Profiles. *Research and Technology Exposition, Northeastern University*.
- Mourant, RR, Jaeger, BK, & Gergiso, T[‡] (2004). Display Configuration and Simulator Sickness. *Annual Meeting of The Transportation Research Board. Washington, D.C.*
- Beiswenger, K^{*}, Briggs, L, & Jaeger, B (2004). Documentation and Instructional Booklet for Operation of the Collaborative Computing and Conference Facility Equipment. *Document generated as part of the Collaborative Computing Facility project*. Developed with IT Coordinator LeBaron Briggs and Student Kerri Beiswenger. The facility in the MIE Department became operable February 2004.
- Yang, G[‡], Baniahmad, F[‡], Jaeger, BK, & Mourant, RR (March 2004). A Solution to the Rear-vision Problem in a Fixed-Based Driving Simulator, *Northeastern University Technology Exposition, Poster Session*.
- Jaeger, BK (July 2003). Human Factors Issues in Automobile Collisions. *Massachusetts State Troopers Accident Reconstruction Division, Seminar at State Police Barracks, Danvers, MA*.
- Mourant, RR & Jaeger BK (1999). Dynamic evaluation of pre-entry HOV Signage using a Virtual Environments Driving Simulator. *Vision in Vehicles, Representing Virtual Environments Laboratory, Northeastern University*.
- Mourant, RR & Jaeger, BK[‡] (1998). HOV Lane Simulation: Driver Performance as a Function of Traffic Control Sign Content, Presentation, and Standardization. *Technical Report and Presentation for Massachusetts Highway Commission*.
- Chiu, S[‡], Mourant, RR, Belambe, A[‡], & Jaeger, BK[‡] (1997). A Simulator-Based Study of Nighttime Highway Lane Shifts. *Technical Report, Massachusetts Highway Commission*.

➤ **Book Chapters**

- Mourant, RR & Jaeger, BK (2004). Dynamic Evaluation of Pre-Entry HOV Signage Using a Virtual Environments Driving Simulator. In *Vision in Vehicles*, Gale, A.G. (Ed.), Vision in Vehicles Press, Derby, United Kingdom, 2004.
- Mourant, RR & Jaeger, BK (2000). Evaluation of HOV Signage using a Virtual Environments Driving Simulator." In Gale, AG (editor) *Vision in Vehicles VIII*, U.K. Elsevier Science B.V. North-Holland.

➤ **Engineering Projects, Creative Productivity, and Research Initiatives**

2011-2012: "App to electronically formulate functional teams across multiple criteria" –Working with Electrical Engineering student Niyi Motayo to create a program and interface to generate, modify, and maintain work-based groupings across dynamically specified criteria.

2009-2011: "A Game to Train Drivers in Hazard Detection" –Simulator environment construction and data collection to evaluate and train drivers to better detect peripheral hazards. Project with Na Chen, Tanvi Chitnis, and Ron Mourant in Virtual Environments Laboratory at Northeastern University. Presented at 2010 Research & Scholarship Exposition at Northeastern.

2008-2009: "User Interface Design Analysis for In-Vehicle Media System Evaluation" –Research project with Bose Media Systems and Ron Mourant, Yingze Lin, and Sonali Gupta of the Virtual Environments Laboratory at Northeastern University.

2008: "Expert Evaluations on Usability and Functionality of Bose® Factory-Installed Systems" –Research project with of Computer Engineering Master's candidate Guihua Yang in Virtual Environments Laboratory at Northeastern University.

2004-2005: "Comparison of Divided Attention of Novice and Experienced Drivers Between Rear-view Mirrors and Lane Change Task" –Research project with Computer Engineering Master's candidate Guihua Yang in Virtual Environments Laboratory at Northeastern University.

2001-2003: "Driving Assessment of Brain-Injured Patients Ability to Operate Motor Vehicles: Evaluation of Cognitive and Motoric Processing Capabilities & Skill Retraining" –Virtual Environment Driving Simulator for Neurological Testing & Rehabilitation, Installation at and Collaboration with Researchers and Neuroscientist at Kessler Rehabilitation Institute, West Orange, NJ. Project with Ron Mourant and Talal Al-Shihabi.

2001: "The Effects of Sensory Input Level on Cognitive and Motoric Operator Performance in Actual and Computer-Generated Environments" –Research project and doctoral dissertation in Virtual Environments Laboratory at Northeastern University.

1999: "The Role of Kinesthetic Feedback in Spatial Learning and Navigation Training in Virtual Environments" –Cooperative research project with Department of Psychology and Department of Mechanical, Industrial and Manufacturing Engineering. Proposed to U.S. Army Research Institute.

1997: "Application of Simulation Methodology for Scheduling Rates of Arrival with Finite Resource Allocation" –A research project that developed a methodology for posting arrival times for professional tennis competitors according to mean match time and proximity and availability of courts. Generated from a published closed-form analytical problem with identical parameters.

1993-1996: "3-Dimensional Imaging and Virtual Reality in Biomedicine" –Survey of applications for imaging and modeling internal anatomy and physiology for teaching and training purposes.

1995: "An Expert System for the Diagnosis of Lumbar Plexus Nerve Lesion" –a *backward* chaining computer program to assess spinal nerve root involvement in the areas of the abdomen, pelvis, and lower extremity.

1994: "An Expert System for the Diagnosis of Brachial Plexus Nerve Lesion" –a *forward* chaining computer program to assess terminal nerve involvement in the pectoral region and upper extremity.

1994: "Dissipation of the Heelstrike Transient and Ground Reaction Force Management in Selected Outsole and Midsole Technologies" –Biomechanics research performed and published at Reebok® International Human Performance Engineering Laboratory.

1993: "Kinematics of Manual Wheelchair Propulsion", with student Kevin Lucia –Analysis of the phases and segmental displacements during manual wheelchair locomotion.

1992: "Ergonomic Investigation of Automobile Interiors: Selected Domestic vs. Foreign Models" – Parametric and nonparametric analysis of design functionality and usability for vehicle operators.

~ PROFESSIONAL WEB SITES ~

- <http://www1.coe.neu.edu/~bkjaeger> - Home page, Northeastern University College of Engineering
- <http://www.coe.neu.edu/research/velab> - Virtual Environments Lab, Ronald Mourant, Director

~ LANGUAGE COMPETENCIES ~

- **English, French, Spanish**

TEACHING AND ADVISING

~ TEACHING RECORD: COURSE LISTINGS TO 2011 ~
COURSE NUMBER, NAME, CRN/KEY NUMBER, ENROLLMENT

➤ **Fall 2011**

- GE 1110, Engineering Design: CRN# 10823, 28
- GE 1110, Engineering Design: CRN# 10105, 18 - Honors
- IE 4625, Facilities Planning and Material Handling: CRN# 15638, 17
- ENLR 5122, Gordon Leadership Program, CRN# 31759: Faculty Advisor, 1 Scholar

➤ **Summer 2011**

- MEIE 4701, Senior Capstone Design I, CRN#40172, 1 Hybrid Capstone Team of 5: 2 ME, 3 IE,

➤ **Spring 2011**

- GE 1111, Engineering Problem Solving and Computation, CRN# 31200, 29
- GE 1111, Engineering Problem Solving and Computation, CRN# 31203, 25
- IE 4522, Human-Machine Systems: Course: CRN# 31548, 32
- IE 4523, Human-Machine Systems Laboratory: CRN# 31549, 33
- MEIE 4702, Senior Capstone Design II, CRN# 34114, 1 Capstone Team of 5

➤ **Fall 2010**

- GE 1110, Engineering Design: CRN# 10269, 28
- GE 1110, Engineering Design: CRN# 11749, 27
- IE 4510, Digital Simulation Techniques, 2 Tracks CRN# 15366, 43
- MIM U701, Senior Capstone Design I, CRN#15440, 1 Capstone Team, 5
- IE5978, Indep. Study: Teaching Apprenticeship in Digital Simulation, CRN#16199, 1 Student

➤ **Spring 2010**

- GE 1111, Engineering Problem Solving and Computation, CRN# 31526, 29
- GE 1111, Engineering Problem Solving and Computation, CRN# 31531, 28
- IE 4522, Human-Machine Systems: Course: CRN# 31946, 38
- IE 4523, Human-Machine Systems Laboratory: CRN# 31947, 38
- MEIE 4702, Senior Capstone Design II, CRN# 35836, 1 Capstone Team of 5

➤ **Fall 2009**

- GE 1110, Engineering Design: CRN# 11240, 28
- GE 1110, Engineering Design: CRN# 11988, 31
- GE 1110, Engineering Design: CRN# 11032, 30
- IE 4625, Facilities Planning and Material Handling: CRN# 15484, 24

TEACHING RECORD

~ COURSE LISTING (continued) ~

➤ **Spring 2009**

- GE U110, Engineering Design: CRN# 68431, 24
- GE U110, Engineering Design: CRN# 61611, 29
- MIM U522, Human-Machine Systems: Course: CRN# 72983, 37
- MIM U523, Human-Machine Systems Laboratory : CRN# 72999, 37
- MIM U702, Senior Capstone Design II, CRN# 67432, 1 Capstone Team
- MIM U710, Indep. Study in Human Factors Engineering: CRN# 95620, 1 Student, Ind. Engin.
- MIM U971, Honors Thesis: Digital Simulation Techniques, CRN# 94248, 1 Advisee, Ind. Engin.

➤ **Fall 2008**

- GE U110, Engineering Design: Key# 13843, 29
- GE U110, Engineering Design: Key# 23751, 22
- MIM U510, Digital Simulation Techniques: Key# 07615, 22
- MIM U701, Senior Capstone Design I, Key# 09875, 1 Capstone Team
- MIMU 970, Honors Thesis: Digital Simulation Techniques, 1 Advisee, Industrial Engineering

➤ **Summer 2008**

- MIM U922, Indep. Study in Project Development: Key# 77168, 1 Advisee, Electrical Engin.
- MIM U924, Indep. Study in Project Management: Key# 77906, 1 Advisee, Industrial. Engin.

➤ **Spring 2008**

- GE U111, Engineering Problem Solving and Computation: Key# 09277, 29
- GE U111, Engineering Problem Solving and Computation: Key# 09214, 28
- MIMU 924, Indep. Study in Human Factors Engineering: Key# 38921
- MIM U523, Human-Machine Systems Laboratory : Key# 02463, 36
- MIM U522, Human-Machine Systems: Course: Key# 02479, 36

➤ **Fall 2007**

- GE U110, Engineering Design: Key# 66260, 28
- GE U110, Engineering Design: Key# 66872, 30
- MIM U625, Facilities Planning and Material Handling: Key# 48914, 22
- GE U100, Introduction to the Study of Engineering: Key# 61471, 34 - Faculty Advisor only
- MIMU 924, Indep. Study in Engineering Site Planning: Key# 93459, 1 Advisee, Industrial Engin.

➤ **Spring 2007**

- GE U111, Engineering Problem Solving with Computation: Key# 03086, 29
- GE U111, Engineering Problem Solving with Computation: Key# 04494, 28
- MIM U523, Human-Machine Systems Laboratory : Key# 17062, 14
- MIM U522, Human-Machine Systems: Course: Key# 17153, 14

TEACHING RECORD

~ COURSE LISTING (*continued*) ~

➤ **Fall 2006**

- GE U110, Engineering Design: Key# 42947, 28
- GE U110, Engineering Design: Key# 57002, 30
- MIM U510, Digital Simulation Techniques: Key# 43671, 28
- GE U100, Introduction to the Study of Engineering: Key# 57887, 29 - Faculty Advisor only
- MIM U790, Honors Thesis: Facilities Planning Course, Part II, 1 Advisee, Industrial Engineering

➤ **Spring 2006**

- MIM U625, Facilities Planning and Material Handling: Key# 63342, 31
- GE U111, Engineering Problem Solving with Computation: Key# 57892, 29
- GE U111, Engineering Problem Solving with Computation: Key# 57915, 29
- IEM G410, Independent Study in Interdisciplinary Engineering Design, 1 Graduate Student
- MIM U790, Honors Thesis Rehabilitation Engineering Project Part II, 2 Advisees, 1 IE/ME 1 IE

➤ **Fall 2005**

- GE U110, Engineering Design: Key# 21121, 29
- GE U110, Engineering Design: Key# 04180, 27 - Honors
- GE U111, Engineering Problem Solving with Computation: Key# 15848, 30
- MIM U790, Honors Thesis Industrial Software Selection Process Part I, 1 IE Advisee
- IEM G410, Indep. Study in Interdisciplinary Engineering Design, 1 Graduate Student

➤ **Summer 2005**

- MIM U790, Honors Thesis Usability Engineering Project Part II, 2 ME Advisees
- MIM U790, Honors Thesis Rehabilitation Engineering Project Part I, 2 Advisees, 1 IE/ME 1 IE

➤ **Spring 2005**

- GE U111, Engineering Problem Solving with Computation: Key# 04746, 30 - Honors
- GE U111, Engineering Problem Solving with Computation: Key# 20904, 30
- MIM U790, Honors Thesis Usability Engineering Project Part I, 2 ME Advisees
- MIM U523, Human-Machine Systems Laboratory : Key# 10521, 24
- MIM U522, Human-Machine Systems: Course: Key# 10472, 24

➤ **Fall 2004**

- GE U110, Engineering Design: Key# 66441, 30
- GE U110, Engineering Design: Key# 66232, 32
- MIM U510, Digital Simulation Techniques: Key# 49995, 16

TEACHING RECORD

~ COURSE LISTING (*continued*) ~

➤ **Spring 2004**

- GE U111, Engineering Problem Solving and Computation: Key# 50662, 29
- GE U111, Engineering Problem Solving with Computation: Key# 50683, 31
- MIM U510, Digital Simulation Techniques: Key# 51061, 11

➤ **Fall 2003**

- GE U100, Introduction to the Study of Engineering: Key# 07407, 30 - Faculty Advisor only
- GE U110, Engineering Design: Key# 07496, 28
- GE U110, Engineering Design: Key# 07587, 32
- GE U110, Engineering Design: Key# 07600, 32

➤ **Spring 2003**

- GE 1101, Engineering Problem Solving with Computation:, Key# 54107, 28
- GE 1101, Engineering Problem Solving with Computation: Key# 54154, 27
- MIM 1410, Digital Simulation Techniques: Key# 60751, 14

➤ **Winter 2003**

- GE 1102, Engineering Problem Solving with Computer Applications: Key# 07935, 32
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 07961, 31
- GE 1702, Engineering Problem Solving with Computer Applications: Key# 05577, 16 - Honors
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 01856, 25 - Evening

➤ **Fall 2002**

- GE 1103, Engineering Design: Key# 53409, 33
- GE 1103, Engineering Design: Key# 53420, 33
- MIM 1522, Human-Machine Systems: Key# 55861, 16

➤ **Spring 2002**

- GE 1101, Engineering Problem Solving with Computation: Key# 17320, 31
- GE 1701, Engineering Problem Solving with Computation: Key# 17377, 25 - Honors
- MIM 1410, Digital Simulation Techniques: Key# 09919, 14

➤ **Winter 2002**

- GE 1102, Engineering Problem Solving with Computer Applications: Key# 64217, 21
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 64238, 19
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 64259, 32
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 64285, 19
- GE 1003, Reflection on Cooperative Education, MIM Section: Key# 29658, 13
- GE 1003, Reflection on Cooperative Education, ECE Section: Key# 29621, 15

TEACHING RECORD

~ COURSE LISTING (*continued*) ~

➤ **Fall 2001**

- GE 1103, Engineering Design: Key# 16597, 29
- GE 1703, Engineering Design: Key# 17036, 34
- MIM 1522, Human-Machine Systems: Key# 14242, 15

➤ **Spring 2001**

- MIM 1410, Digital Simulation Techniques: Key# 13550, 12
- GE 1003, Reflection on Cooperative Education, MIM Section: 16
- GE 1003, Reflection on Cooperative Education, ECE Section: 12
- GE 1003, Reflection on Cooperative Education, ECE Section: 14
- GE 1102, Engineering Problem Solving with Computation: Key# 02762, 20

➤ **Winter 2001**

- GE 1102, Engineering Problem Solving with Computer Applications: Key# 76839, 31
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 76818, 32
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 76711, 24
- GE 1102, Engineering Problem Solving with Computer Applications: Key# 76727, 27
- GE 1003, Reflection on Cooperative Education, ECE Section, Instructor, Key# 53087, 20
- GE 1003, Reflection on Cooperative Education, MIM Section, Assistant, Key# 53092, 18

TEACHING AND ADVISING

~ **ADVISING AND SUPERVISION OF UNDERGRADUATE STUDENTS** ~

➤ **Advising, Services, and Assistance**

An Academic Specialist is not formally assigned a pool of students to advise academically. Rather, out-of-class efforts are directed toward advising and consulting with students for career decisions, Honors Theses, Advanced Technical Writing assignments, and research projects. Advising roles listed below typically involve significant amounts of time editing and proofreading as well as meeting and consulting.

➤ **General Advising**

- Advise students as to majors, minors and graduate school and career paths
- Counsel undergraduate students for academic decisions and transfer options
- Provide professional opinions and advice for interviewing and co-op decisions
- Serve as Faculty Advisor for Office of Student Conduct and Conflict Resolution to help students understand professional, personal, and ethical responsibility

➤ **Projects Beyond the Classroom**

- Research and obtain permission for IE optimization studies for students' project work
- On behalf of the students, visit project sites, meet with managers, compose permission request letters, examples listed below:
 - Resmail, Simulation Project
 - Loew's Theater, Simulation Project
 - Stetson West Dining, Simulation Project
 - Government Center T Station, Simulation Project
 - InfoCommons Computer Allocation, Simulation Project
 - STA Travel Services, Simulation Project
 - Mondo Sub Service Shop, Simulation Project
 - Crossroads Market: Two Simulation Projects
 - NU Bookstore Bag Check System, Simulation project
 - Wendy's Food Service, Simulation and Capstone I Project
 - Gillette Stadium Access Road Traffic Analysis, Simulation project
 - Snell Library InfoCommons Computer Center, Simulation project
 - Cleveland Circle Cinema: permission request letter and Simulation project
 - Institute of Industrial Engineers Service Project: Dining Hall Queue Management
 - Engineering Majors Jeopardy, Flash game by Seth Sivak – Consulted and Collaborated
 - REU project for Scheduling Radiology Resources at Mass Gen. Hospital Oncology Treatment Center

➤ **Advanced Technical Writing Projects**

When working with students for their Advanced Technical Writing papers, I typically meet with each individual, read and respond to their memo proposals as necessary, then may meet again with each student to discuss the chosen topic before signing the approval form. I also provide content, editing, and reviewing feedback and serve as a subject matter expert for interviews for IE and ME topics as relevant.

- Multiple Interviews for Advanced Writing for the Disciplines, 2011
- Human-Device Interaction, Ivan Goryachev, 2010 + Interview
- Technical Communication in the Engineering Culture, Christopher Joyce, 2010 + Interview
- Current Practices in Professional Discourse Communities, Janet Tanaga, 2008 + Interview
- Foreign Object Debris and Management, Dwight Aberle, 2007 + Interview
- Facility Location Techniques and Algorithms, Alison Reppy, 2008 + Interview
- Radio Frequency Identification in Industry, Matthew Whalen, 2006
- Air Pollution Standards, Effects and Management, Andrew Alix, 2006
- Analysis of Gender Differential in STEM Programs, Sarah Hewes, 2006
- Changes in Operations and Material Handling at GE, Brittany Damon, 2006
- Bicycle Derailleur Redesign for Safety and Performance, Ashley Pierce, 2006
- Benefits of Altering Corporate Facilities for Working Families, Kelly Sietz, 2006
- Simulation Analysis of Dining Queues in Campus Residence, Jenna Eikoff, 2006
- Alternative Classroom Boards for Improved Presentation, Andrew Boyajian, 2006
- A New Product: Adjustable Ergonomic Knives, Joseph Schneider, 2005
- Design of Ergonomic Hand Tools for Special Population, Meredith Monaco, 2005
- Lego Lab Activities to Illustrate and Teach the Engineering Design Process, Mark Sivak, 2004
- Seat Design and Construction NU Mini Baja Off-Road Vehicle, Caitlyn Bosecker, 2003-2004
- MIE Department Collaborative Computing Facility Design: Kerri Beiswenger, 2003-2004
- Human Factors Considerations for Low Gravity Conditions: Alex Otañez, 2004
- Roller Coaster Occupant Safety Design, Adam Rocha, 2004 + Interview
- Customized Language Translator Device: Chris Johnson, 2004
- Economics of Crime: Automobile Collision Injuries: Adam Rocha, 2003
- Development of a Family Tree System with C++ Programming: Dustin Weir, 2002

➤ **Independent Studies, Directed Studies, and Junior-Senior Honors Projects & Theses, compiled**

Many of the initiatives below are also listed elsewhere, such as in presentations, publications, university activities, and honors/awards, in addition to my teaching load. This is because in my estimation these projects are not self-contained and should not happen in a vacuum. They necessarily become part of a larger scope of service by the students for others. Any and every out-of-class Independent Study, Honors Project, and Directed Study with me requires the students to give back in some meaningful way.

Examples of how others have benefited directly from these efforts are: Using project work to improve our courses, presenting to our entire first-year engineering class (Reebok), improving devices for medical treatment, assisting disabled individuals, helping NU with facilities planning, assisting special populations in customized device design, helping the City of Boston (Harbor Walk), to name a few. Significant compensation for these projects is realized in seeing the students' experiences beyond the classroom and in the rewards they reap when applying their work for the benefit of others.

- Directed Study: Educational App/Device Design in Electrical Engineering – Niyi Motayo, 2010-111
- Independent Study: Digital Simulation Apprenticeship, 4 credits - Corey Balint, Summer-Fall 2010
- Directed Study: Quality Managers in Engineering Education- Chris Wishon & Corey Balint, 2009-10
- Directed Study: Engineering Design Process in Practice - Ivan Goraychev & Matt Van Dyke, 2009-10
- Undergraduate Research: Environmental Engineering Education - Ethan LaRochelle, Spring 2009
- Honors Project/Thesis Advisor: Digital Simulation, 8 credits - Lauren Hale, Fall 2008-Spring 2009
- Independent Study: Human-System Interaction and Design, 4 credits - Emily Shay, Spring 2009
- Directed Study: Facilities Renovation: Carter Courts at NU - Sean Naegeli Spring –Summer 2008
- Directed Study: Engineering Education - Brittany Damon and Alison Reppy, Spring 2008
- Honors Project/Thesis Advisor: Cognitive Workload, 4 credits - Kelly Seitz, 2007-08
- Honors Project/Thesis Advisor: Cognitive Workload, 4 credits - Matt Whalen, 2007-08
- Independent Study: Facilities Planning Lab Development, 4 credits - Mike Pankowski, Fall 2007
- Directed Study: Redesign of Richards Lab Space - Danielle Borsari & Lauren Christison, Fall 2007
- Independent Study: Site Planning Boston Harbor Walk , 4 credits - Christina Skursky, Fall 2007
- Directed Study: Driver Risk Assessment by Military Personnel - Adam Ginsburg, Summer-Fall 2007
- Honors Project/Thesis Advisor: Facilities Planning SW & Labs, 8 credits - David Magargee, 2005-07
- Directed Study: Research in Environmental Engineering Education - Emily Rumberger, 2006-07
- Directed Study: Research in Environmental Engineering Education - Taylor Denerlein, 2006-07
- Directed Research Project: Facilities Planning - Karthik Subramanian, Spring 2006
- Honors Project/Thesis Advisor: Functional Wheelchair Designs, 8 credits - Erica Kemp, 2005-06
- Honors Project/Thesis Advisor: Functional Wheelchair Designs, 8 credits - Mike Jenkins, 2005-06
- Independent Study: Engineering Design at Reebok®, 1 credit - Michelle Garron, 2005-06
- Directed Study: Programming Project Development Consultation - Scott Heines, Fall 2005
- Independent Study : Programming Project Development - Kevin Eldridge, Summer-Fall 2005
- Honors Project/Thesis Advisor: Cell Phone Usability Redesign, 8 credits - Alex Hussain, 2004-05
- Honors Project/Thesis Advisor: Cell Phone Usability Redesign, 8 credits - Caitlyn Bosecker, 2004-05
- Independent Study: Digital Simulation Project Development, 4 credits - Steven LaMarre, 2002-03

➤ **Senior Capstone Design Project Consultations**

For Senior Mechanical and Industrial Engineering Capstone Projects, teams each have their own assigned faculty advisor. My involvement has primarily been consulting with teams on human factors issues, advanced prototype development, and engineering design as well as advising in relation to project content, rigor, and/or composition. In addition being an Advisor on record, I confer on presentation skills, attend preparatory meetings, rehearsals, and actual Capstone presentations for other teams as well.

- *Consult on several Capstone Projects and serve as Principle Investigator (PI) for others 2011-2012*
- Medical Devices Design: Photodynamic Therapy Delivery System, 2011-2012 (*Faculty Advisor*)
- MassPort/Jetblue C Passenger Flow Optimization at Logan Airport, 2010-2011 -PI (*Faculty Advisor*)*
- Scheduling for the Northeastern University School of Technological Entrepreneurship, 2010
- Zipcar® Incorporated, Lean Logistics for Vehicle Service, 2010 (*Faculty Advisor*)
- Implementing Industrial Engineering in the Non-Profit Community, 2010
- Harvard Vanguard Medical Associates: Mitigating the Effects of Patient No-shows, 2010 - PI
- Delta Airlines, Baggage Reconciliation Process Management, 2009* (*Faculty Advisor*)
- MS Walker Company, Facility Layout Improvement, Facilities Planning, 2009
- Beth Israel Deaconess Medical Center, Lean Training for Personnel, 2009
- NU Facilities Planning for Industrial Engineering Laboratory Activities and Skills, 2009
- Thin Scale Project, Anthropometrics and Human Factors Interface Design, 2009
- Advanced Vehicle Seat Design, Anthropometric Principles and Analyses, 2008
- Healthcare Systems Improvement Online Job Bank, Web Interface Design, 2008
- YMCA Facility Site Selection, Algorithm Development: Industrial Engineering, 2008*
- Gutter Cleaning Tool -User Interface and Biomechanical Principles: Mechanical Engineering, 2008
- Adjustable and Anthropometric Seat Design: Mechanical and Industrial Engineering, 2008
- Rain Gutter Cleaning Device, Kinematics, Kinetics, and Anthropometric Principles, 2007
- Pruning Skill Saw, User Interface and Biomechanical Principles: Mechanical Engineering, 2007
- Ankle Joint Model, Anthropometrics and Biomechanical Considerations, Mech. Engineering, 2007
- Human-Retrieval Robot Design and Development, Mech. and Industrial Engineering, 2006-2007
- Functional Cell Phone Design for Universal Usability, Mech. & Industrial Engineering, 2005-2006*
- Development of an Educational Mechanical Toy Clock Kit, Mechanical Engineering, 2005-2006*
- Lab Design Development for Introduction to Industrial Engineering Course, 2005-2006
- YMCA Service-Based Decision-Support System, Industrial Engineering, 2005-2006
- Self-Righting Kayak Design, Mechanical Engineering, 2004-2005*
- Butane Thermal Beverage Vessel, Industrial Engineering, 2005-2006
- Accommodating Elbow Rehabilitation Device: Mechanical Engineering, 2004-2005
- Service-Based Project for AmeriCorp Fellows Records: Industrial Engineering, 2004-2005*
- Malden Mills® Textile Process Optimization: Industrial Engineering, 2003-2004*
- BJ's® Warehouse Optimization Project: Industrial Engineering, 2003-2004
- ZipCar® Fleet Cleaning Simulation: Industrial Engineering, 2002-2003*
- Staples® Manufacturing Facility Analysis: Industrial Engineering, 2002-2003
- Workability® Workstation Design: Mechanical & Industrial Engineering, 2002-2003
- Imperial Distributors® Warehouse Optimization: Industrial Engineering, 2001-2001
- Corner Adapting Motorcycle Headlight: Mechanical Engineering, 2001-2002
- Dental Abutment Device: Mechanical & Industrial Engineering, 2001-2002*

**Capstone Design Winners*

TEACHING AND ADVISING
~ CONSULTING WITH AND SUPERVISION OF GRADUATE STUDENTS ~

➤ **Graduate Students: Advising and Consulting**

As Associate Director of the Virtual Environments (VE) Lab, I do extensive consulting with graduate students from the Lab. However, most Lab members are formally *advised* by VE Lab Director, Ron Mourant. Some of these students, their degrees and topics are provided below, with my role listed:

➤ **General Ongoing Advising, Graduate: Work w/ Graduate Researchers in Virtual Environments Lab**

- Linzhen Nie: PhD concentrating in Computer Systems Engineering, 2012, Consulting
Scenario Generation in Virtual Environments
- Na Chen: Interdisciplinary PhD concentrating in Computer Systems Engineering, 2012, Consulting
Understanding and Improving Novice Drivers' Hazard Perception Skills
- Tanvi Chitnis: Master of Science in Computer Systems Engineering, 2011, Co-Advising
Scan Patterns of Novice and Experienced Drivers When Encountering Hazards
- Zhishuai Yin: Interdisciplinary PhD concentrating in Computer Systems Engineering, pending
Communication and Decision Making by Intelligent Autonomous Agents
- Govind Mudumbai: Master of Science in Computer Systems Engineering, 2009, Consulted in Research,
Modifying Road & Vehicle Databases at Hills & Curves
- Sonali Gupta: Master of Science in Computer Systems Engineering, 2009, Consulted in Research
Driver Performance on Curves Using a Driving Simulator
- Namrata Gundewadi: Master of Science in Industrial Engineering, 2008, Co-Advised
Analysis of Novice and Experienced Drivers' Performances in Analogous Scenarios
- Maureen O'Connell: Master of Science in Industrial Engineering, 2007, Co-Advised
Sensation and Perception of Motion in a Simulator Using Optical Flow Factors
- Prasanna Rengarajan: Master of Science in Software Engineering, 2007, Project Consultant
The Effect of Driving Environments on Simulator Sickness
- Stacy Lovell: Master of Science in Computer Engineering, 2006, Project Consultant
Situation Awareness Modeling and Measurement
- Najla Ahmed: Master of Science in Computer Engineering, 2006, Project Co-Advisor
Producing Velocities with Varying Fields of View and Optical Flows
- Charles Adetiloye: Master of Science in Computer Systems Engineering, 2006, Project Consultant
Human and Autonomous Object Interaction in Virtual Environments

- Guihua Yang: Ph.D. in Software Engineering, 2005, Co-Advised
Using Open GL to Model 3-Dimensional Driving Scenarios
- Guihua Yang: Master of Science in Software Engineering, 2004, Co-Advisor, Project Assistant
Mirror Glance Behavior of Novice and Experienced Drivers
- Farnaz Baniahmad: Master of Science in Software Engineering, 2003, Co-Advisor
Development of Software for a Rear-View Driving Simulator
- Yimin Shen, Master of Science in Software Engineering, 2003, Consultant and Project Director
Evaluation of Signage for High Occupancy Vehicles Using a Driving Simulator
- Mita Biswas, Master of Science in Software Engineering, 2001, Consultant
Factors Affecting Presence in Virtual Environments
- Alex (Feng-ji) Tsai: Master of Science in Software Engineering, 2000, Consultant
Drivers Distraction Due to In-Vehicle Displays
- Shinji Tanaka: Master of Science in Software Engineering, 1999, Consultant and Project Assistant
Development of a Software Tool For Human Cognitive Performance Measurement
- Susan (Chiu) Fairchild: Master of Science in Software Engineering, 1998, Consultant, Project Assistant, *Analysis of Driver Performance in Highway Construction Zones*

➤ **Recommendations, References, Compositions & Reviews (Listing available)**

- Approximately 50 per year
- Co-op and employment references
- Grant, sabbatical, and promotion support
- REU's: Undergraduate Research Programs
- Evaluator/ Support on Grants and Proposals
- Security clearances Character references and
- Scholarships, study abroad and special programs
- Graduate school and program/university transfers

- Assist with Judicial Appeal letters for OSCCR cases
- Review, edit, and advise on resumes

SERVICE AND PROFESSIONAL DEVELOPMENT

~ SERVICE AND ACTIVITIES WITHIN MECHANICAL AND INDUSTRIAL ENGINEERING DEPARTMENT (MIME/MIE) ~

- **Institute of Industrial Engineers (IIE), Student Chapter (2002-2011)**
 - Serve as IIE Student Paper Competition evaluator
 - Sponsor and mentor individual members and teams
 - Announce, attend, and speak at recruitment meetings
 - Participate in Faculty-Student Dinner networking Events
 - Support and participate in selected IIE Chapter meetings and events
 - Northeast Chapter Conference: Consult on planning, attend events and banquet
 - Speaker/Panelist and participant at Northeast Chapter Conference hosted by NU IIE

- **MIE Lab Tours for First-year Engineering Students (Inaugural 2011)**
 - Create and present multiple lab-based sessions to inform and engage first-year students
 - Provide an experience to represent course offerings and applications in a meaningful way

- **MIE Open Houses for Prospective Students & Welcome Days for Accepted Students (2004-2011)**
 - Represent MIE, introduce faculty and student speakers at Departmental Presentation
 - Present on courses, academic activities, career paths, and research opportunities in Mechanical and Industrial Engineering and Northeastern University, 2-3 times per year

- **Freshman Engineering Open House, Industrial Engineering (IE) (October 2003-2011)**
 - Coordinated with NU Institute of Industrial Engineers for multiple activity/information areas
 - Generated and demonstrated simulation example sets to represent Industrial Engineering.
 - Have planned and conducted Industrial Engineering activities with IE faculty Sue Freeman

- **MIE Departmental Committees and Faculty Retreats (2002-2011)**
 - Industrial Engineering Group: for general curriculum structure, IE minor, and student issues
 - Strategic Task Forces: Student Outreach/Recruitment, Consult on Curriculum and Scheduling

- **Attend Student Advisory Board Meetings (ongoing, most recent 2011)**
 - *Listen* to students' concerns and suggestions
 - *Discuss* course and curriculum issues with students and administration
 - *Follow through* on reasonable suggestions and recommendations whenever feasible

- **Virtual Environments Simulation and Human Factors Laboratory, Associate Director (1996-present)**
 - Supervise research projects in Lab, meet with graduate students as previously noted
 - Secure Human Subjects clearance through Division of Research Integrity at NU
 - Manage documentation from Division of Institutional Compliance
Human Subjects Research Review Committee

- **Design of Industrial Engineering Computing and Teaching Laboratory (2004-2007, some ongoing)**
 - Work with IT Coordinator LeBaron Briggs and MIE Lab Director to research, plan, design and oversee a computer teaching lab facility to support IE lab sessions and class work

- **Textron Partnership, MIE Co-op and Office for University Corporate Partnerships**
 - Faculty host for Textron visitors, participate in events with other attendees and guests
 - Liaise with co-op coordinators and guest speaker to develop presentation for MIE class
 - Helped develop the Evaluation Survey for Event Assessment Questionnaire

- **Design of Collaborative Computing and Conference Facility (2003-2004)**
 - Worked with LeBaron Briggs and Kerri Beiswenger to research, plan, and design facility to foster collaborative instruction and project work
 - As noted, assisted in the development of documentation for the use of the facility

- **Curriculum Committee Participant, Mechanical, and Industrial Engineering (2002-2003, 2009)**
 - Assisted in Planning Quarter-to-Semester Conversion for IE and some ME courses
 - Attended meetings for ABET follow-up to revise curriculum sequence and contents

SERVICE AND PROFESSIONAL DEVELOPMENT

~ SERVICE AND ACTIVITIES WITHIN THE COLLEGE OF ENGINEERING ~

- **Gateway Faculty Co-Coordinator (2001-2011)**
 - Work and meet with team of instructors to ensure high-quality first-year engineering experience
 - Appointed/served as Course Coordinator and/or Co-Coordinator for GE 1101/1111, GE 1102, and GE 1103/1110 to plan and oversee aspects of team instruction and organization, class and material administration, facility scheduling, and course-related laboratory issues and concerns.

- **College of Engineering (CoE) Community Committee (2011 – ongoing)**
 - Team of Faculty and staff working in CoE to continue building community and camaraderie
 - Participate in planning initiatives such as newsletter, website, and connecting events and docs

- **Summer Bridge Program for Incoming Students (ongoing)**
 - Participated in and assisted teaching session in AutoCAD and Excel with COE faculty and Staff
 - Attended Social and Networking Events at Warren Center in Ashland and met attendees

- **Building Bridges in Engineering - High School Outreach & Recruitment at NU (ongoing)**
 - Recruited and coordinated Student volunteers to assist in presentations
 - Planned, organized, and conducted Luncheon Keynote Sessions with COE faculty and Staff
 - Conducted a variety of Industrial Engineering Activity sessions with S. Freeman & A. Gouldstone

- **Freshman Forum - Industrial Engineering (ongoing)**
 - Helped plan program to Introduce Industrial Engineering (IE) Program to Freshman Engineers
 - Created, coordinated, and helped present career path presentation
 - Recruited IE Students to assist and present at forum

- **Women in Engineering (WIE), Society of Women Engineers (SWE) & Connections: (ongoing)**
 - Participated in Advising Sessions for female engineers
 - Attended various SWE, WIE, and Connections luncheons and meetings
 - Conducted multiple Computer and Engineering Design sessions for WIE Events
 - Recruited graduate students and coordinated with Sue Freeman for presentations and panels
 - Active as a Connections E-Mentor with regular correspondence with participating population

- **First-Year Support and Connection Events (ongoing)**
 - Attended Engineering Living and Learning Welcome Events for First-Year NU Engineers
 - Participated in Introductory Support Team for incoming Freshman Engineers
Partners Assisting and Linking Students PALS Program for New Students

- **American Society for Engineering Education: Bring a Student Program**
 - Enabled student co-authors to attend ASEE Annual Conference under my sponsorship
 - Electrical Engineering student (2009), two Industrial Engineering students (2010)

- **College of Engineering Computing Task Force with Gateway Faculty Rich Whalen (2006-2010)**
 - Met with COE Computer administrators and technicians to manage computer laboratory and software issues related to General Engineering and other COE computer-based courses
 - Helped develop and maintain COE Lab Users Listserv as an Administrator
- **Jonas Chalk Committee (contributed in 2003, appointed for 2004-2009)**
 - Joined award-winning advice publication developed to initiate dialogue among faculty on best practices, successes, and challenges in teaching freshman engineering students
 - Contributed ideas and solution options for common issues encountered by faculty
 - Helped compose or formulate questions and compile group 'Jonas' response letters
- **College of Engineering E-Mentoring Program (2006-2008)**
 - Mentored engineering students through e-mail and in person
 - Engaged in discussions, provide insight and support to mentees
 - Sponsored and organized through NU Connections Program
- **I2I (Instructor to Instructor) Tutoring Prep Program (Academic Year 2006-2007)**
 - Proposed, developed, and implemented program to train student tutors in teaching practices
 - With Rachelle Reisberg, met regularly & served as a resource for NU engineering & physics tutors
- **WISE Exposition: Women in Science and Engineering (April 2006)**
 - Generated and submitted abstract with Gateway Faculty Sue Freeman to WISE
 - Created Poster with Sue Freeman on the development and research on Pair Programming
 - Selected and organized student representatives to present poster on behalf of COE
 - Attended Poster Session in support of COE and WIE programs
- **FIRST Robotics Competition Judge (May 2004)**
 - Competition For Inspiration and Recognition of Science and Technology hosted at Northeastern
 - Evaluated 30+ teams of high school and college students and their robots in competition and 'pits'
 - Worked with team of judges to determine awards for multiple categories and compose awards reports and statements for presentations
- **Curriculum Committee - First-Year Engineering (2003)**
 - Researched, evaluated and planned Quarter-Semester Conversion for General Engineering courses
 - Developed comprehensive curriculum for semester calendar with Gateway Faculty Rich Whalen
- **Engineering Works! Course Competition Judge (2001-2002)**
 - Served as Design Judge in 2001, Head Judge in 2002
 - Students Teams competed in a Survivor-Theme course while learning about the study of Engineering at Northeastern. Concentrates on teamwork, resourcefulness and responsibility
- **Recommendations and References for Students, previously noted, approximately 50 per year**
 - Compose recommendations: co-op, graduate school, employment, scholarships, and programs
 - Serve as a reference to be listed as a contact and to provide information about student candidates
 - For each recommendation, the requesting student provides a complete and up-to-date résumé, a current transcript, and a personal letter about their background, interests, and aspirations.

SERVICE AND PROFESSIONAL DEVELOPMENT

~ SERVICE AND ACTIVITIES WITHIN NORTHEASTERN UNIVERSITY ~

- **Faculty Advisor for Office of Student Conduct and Conflict Resolution, OSCCR (2005-ongoing)**
 - Volunteered to serve as an advisor for students involved in incidents referred to OSCCR
 - Advised and consulted with over 24 charged students from 2005-present
 - Attended OSCCR hearings on behalf of charged students
 - Training sessions attended in June 2005, June 2010

- **Faculty Advisor Paintball Club *and* Team (2007–ongoing)**
 - Advocated for students to create both team and Club organizations at NU
 - Team was #1 in the nation in 2009 in Class A Collegiate League

- **Center for STEM Education, “Engineering in the K-12 Classroom” (October 2008)**
 - Seminar sponsored by the Center for STEM (Science, Technology, Engineering Math) Education
 - Featured speaker/facilitator Celeste Baine Director of the Engineering Education Service Center
 - Networked and shared ideas with educators of all levels to enhance engineering career appeal

- **Spiritual Life Advisory Board, “Friends of Spiritual Life” Committee (invited & joined 2006)**
 - Have helped plan and/or coordinate events through Spiritual Life Office
 - Evaluated and assessed program and event outcomes

- **In Their Shoes Disability Awareness Program (April 2006)**
 - Participated in a training-awareness to learn about students with disabilities
 - Completed supervised program for disability education

- **Standardized Patient for Physical Therapy (PT) Training and Assessment (2006)**
 - Participated as part of PT training and assessment for clinical integration course work
 - Trained to assume the role of a patient with specific physical and personality characteristics
 - PT students evaluated and treated my character while being filmed and observed by faculty as part of course testing; Part of a grant for Practice-Based Learning in Physical Therapy

- **Using Backwards Design to Plan Instruction (March 2006)**
 - Participated in teaching workshop designed to help in course development and planning
 - Evaluated educational objectives to build a course plan from the endpoint to the beginning

- **Presenter: Seminar for Graduate Teaching Assistants (TAs) on Effective Grading (2002-2006)**
 - Conducted Workshop for Center for Effective University Teaching (CEUT) specifically for TAs
 - Created packet, conducted activities, organized participation for TAs and attending faculty

- **University Community: Alcohol Awareness Program (2005-2006)**
 - Administered VE Lab Driving Simulator in Curry Student Center to illustrate what a driver would experience in terms of impairment when under the influence of alcohol
 - Arranged to consult with research group above and beyond campus sessions
 - Member of Campus Faculty Focus Group on Alcohol Awareness

- **Attendee: Effective Teaching Workshop: “Teaching Large Classes: Making Intimate Spaces Out of Large Places” (October 2005)**
 - Participated in workshop offered by Center for Effective University Teaching with other faculty
 - Learned about and explored strategies to manage and connect with large class populations

- **“Staying Centered” Programs through Spiritual Life Office**
 - “Take a Human Break”, 2005-2011
 - “Chill out Before you Burn Out”, September 2004 → ongoing as offered
 - “Walk the Labyrinth” Mediation, November 2005 → ongoing as offered
 - “Regular Prayers for our Military”, 2004-2010

- **Selected to be Keynote Speaker: Special Program for Advanced Teaching Assistants (January 2005)**
 - Symposium offered by Center for Effective University Teaching for experienced TAs
 - Title of address given: Getting Inspired to Motivate – or is it Motivated to Inspire?

- **Presenter: Effective Teaching Workshop: Teaching Beyond the Written Domain: Techniques for Cultivating Presentation Skills in Your Students (2004 & 2005)**
 - Conducted workshop offered by Center for Effective University Teaching for other faculty
 - Learned, demonstrated, and exchanged teaching and active classroom learning ideas

- **Effective Teaching Workshop: “Fitting it all in–What Course Materials to Put Online” (April 2005)**
 - Participated in workshop offered by CEUT with other faculty
 - Evaluated course elements to determine the best mix of on-line material for course content

- **Effective Teaching Workshop: “Educational Techniques Promoting Active Learning” (March 2004)**
 - Participated in workshop offered by CEUT with other faculty
 - Learned, practiced, demonstrated, and exchanged teaching and active learning ideas

- **Blackboard Training Workshop (March 2004) & Blackboard Course-Building Training (May 2004)**
 - Received Blackboard training by NU Academic Technology Services
 - Attended instructional program on on-line course management and administration
 - Attended second all-day training workshop to configure and build a course in Blackboard

- **“Nurturing the Spirit” Program through Presidents’ Excellence Grant (February, March, & May 2003)**
 - Attended meetings for faculty/staff on balancing life’s professional and spiritual components
 - Participated in “Breakfast for the Soul” conducted by Donna Qualters (CEUT) and Michael Woodnick (Spiritual Life Director)

- **Reviewer & Selection Committee, Graduate Teaching Assistant Awards for CEUT (2003-2005)**
 - Attended TA Awards banquet and sponsored graduate teaching assistants as attendees,
 - Reviewed portfolios and participated in committee meetings for TA award selections

- **Promoting Excellence: Sharing Experience in Teaching First-Year Students (April 2001)**
 - Participated in workshop sponsored by Provost and First-Year Experience Committee
 - Exchanged and evaluated ideas about first-year students and their unique features

SERVICE AND PROFESSIONAL DEVELOPMENT

~ CONFERENCES, SEMINARS, AND PROFESSIONAL ACTIVITIES OUTSIDE NORTHEASTERN UNIVERSITY ~

- **Invited Speaker, MIT Humans and Automation Laboratory (October 2011)**
 - Invited by Lab Director to speak on Human-Machine Systems topic
 - Delivered research talk to Lab members, graduate students, postdocs, and other attendees

- **Division Executive Board, American Society for Engineering Education (ASEE 2011-present)**
 - Currently serving as Assistant to Membership Director, New Engineering Educators Division
 - Appointed to Leadership Team during 2011 Business Meeting at the Annual ASEE Conference

- **Division Executive Board, American Society for Engineering Education (ASEE 2007-2011)**
 - Co-Editor of First-Year Program Newsletter with Sue Freeman and Rich Whalen of NU
 - Nominated to serve on ASEE First-year Programs Division Executive Board
 - Elected during 2007 Business Meeting at the Annual ASEE Conference

- **American Society of Mechanical Engineers (ASME) – E-mentor (ongoing)**
 - Volunteer to mentor undergraduates and/or new graduates in Mechanical Engineering
 - Registered for up to 3 simultaneous mentees through ASME organization

- **American Society for Engineering Education (ASEE)**
 - Vancouver, BC – Attended; presented 2 papers and Workshop, Session Moderator, June 2011
 - Louisville, KY – Attended and presented 2 papers, Session Moderator, June 2010
 - Austin, TX – Attended and presented 2 papers, Session Moderator, June 2009
 - Pittsburgh, PA – Attended and presented 2 papers, Session Moderator, June 2008
 - Honolulu, HI – Attended and presented 3 papers, Session Moderator, June 2007
 - Chicago, IL – Attended and presented 2 papers, Session Moderator, June 2006
 - Portland, OR – Attended and presented 3 papers, June 2005
 - Salt Lake City, UT – Attended and presented 1 paper, June 2004
 - Nashville, TN – Attended and presented 1 poster, June 2003
 - Montréal, Québec – Attended June 2002

- **Human Factors Engineering and Design – Focus Panel Member (October 2010)**
 - Schlesinger Research Institute: selected participant in workspace seating analysis study
 - Evaluated functional, ergonomic and design features of various workspace seating options
 - Liaised with subject matter experts to determine critical elements of workspace seating for functionality, safety, comfort, and aesthetics.

- **Project Invention Convention, Bridgewater College (June 2006 -2010)**
 - Invited to be Keynote Speaker and Judge for Innovation Competition
 - Sponsored by STEM Pipeline Grant Program for Junior High and High School students
 - Student Teams generate a problem definition, then design and present resulting inventions

- **FIRST Robotics, Competition Field Referee (March 2007, March 2009)**
 - Regional Robotic Competition For Inspiration and Recognition of Science and Technology
 - Served as on-field referee for regional competition, helping officiate and ensure fair play

- **Boston Public Schools Department of Science Fair (March 2007)**
 - Volunteered as a judge at Host Site of Northeastern University
 - Evaluated entries for scientific approach, ingenuity, creativity, and scientific advancement

- **McGraw-Hill Freshman Forum Symposium & Charter (2004-2007)**
 - Continually consulted on and reviewed publications for engineering education
 - Networked with other faculty nationwide on first-year engineering programs
 - Program concentrates on improving teaching practices and resources for First-year students
 - Selected to be one of 10 Faculty and Deans nationwide to attend Symposium, November 2004

- **Workshop: “Problem-Based Learning in Engineering Education”**
 - Participated at 2006 American Society for Engineering Education Conference
 - Reviewed, evaluated, and discussed cases for Problem-Based learning applications

- **Workshop: “An Integrated Hands-on Freshman Experience”**
 - Participated at 2006 American Society for Engineering Education Conference
 - Learned to build and operate a miniature oscillating steam engine to take home
 - Experienced the lessons embedded in the activity for first-year engineering students

- **American Society of Mechanical Engineers (ASME) – Focus Panel Member**
 - Bennett Research Institute: selected participant in ASME Biotechnology Panel, 2004
 - Evaluated methods for gathering and disseminating bioengineering information and resources
 - Resulted in establishment of “Communities of Practice” for ASME subdisciplines

- **Workshop: “Tips for Writing, Reviewing, and Presenting an ASEE (or other) Paper”**
 - Participated at 2004 American Society for Engineering Education Conference
 - Reviewed, evaluated, and discussed scholarly paper submissions and writing examples

- **Human Factors and Ergonomics Society (HFES)**
 - Attended New England Student Research Conference – NU, November 2008
 - Attended New England Student Research Conference –Tufts Univ, Boston, November 2005
 - Papers published for presentation – Minneapolis, MN, 2001; New Orleans, LA, 2004
 - Attended New England Section – MIT Boston, January 2003

- **International Workshop on Virtual Rehabilitation (IWVR)**
 - Rutgers, NY – Attended with Virtual Environments Lab members, September 2003
 - Presented Poster on Customizable Virtual Environment Driving Scenarios

- **Seminar for Massachusetts State Troopers Collision Analysis and Reconstruction Division**
 - Planned and conducted full seminar at Police Headquarters in Danvers, MA, July 2003
 - Trained Officers in Human Factors Engineering in Vehicle Driver Perception

- **Specialized Training Seminars at ASEE Conference in Engineering Educational Practices**
 - “An Introduction to Educational Research” and “Case Studies in Engineering Education”
 - Participated at 2003 American Society for Engineering Education Conference

SERVICE AND PROFESSIONAL DEVELOPMENT

~ DOCUMENTS REVIEWED FOR PUBLICATION: TEXTBOOKS AND SCHOLARLY WORK EVALUATED ~

- **Textbook Review for Pearson Prentice Hall**
 - *Discovering AutoCAD 2013*
 - Table of Contents, All chapters (September-October 2011)

 - **Textbook Consultation for Wiley Publishing**
 - *MATLAB: An Introduction with Applications*
 - Meeting with Publisher and Representative (September 2010)

 - **Textbook Review for Elsevier Science & Technology Books**
 - *MATLAB: A Practical Introduction to Programming and Problem Solving*
 - Table of Contents, Chapters 5-9 (June-July 2009)

 - **Textbook Review for John Wiley & Sons**
 - *Computing Concepts with C++ Essentials*
 - Table of Contents, Multiple Chapters (January 2008)

 - **Textbook Review for Elsevier Science & Technology Books**
 - *MATLAB: A Practical Introduction to Programming and Problem Solving*
 - Table of Contents, Chapters 1-4 (January-March 2008)

 - **Textbook Review for Bookworks Publishing for Pearson Education**
 - *Introduction to AutoCAD2008*
 - Table of Contents, Multiple Chapters (July 2007)

 - **Textbook Review for Elsevier Science & Technology Books**
 - *MATLAB: A Practical Introduction to Programming and Problem Solving*
 - Proposal, Table of Contents, Prospectus (June 2007)

 - **Textbook Reviewer for McGraw-Hill Publishers**
 - *Engineering Computation: An Introduction Using MATLAB and Excel* (April-May 2006)
 - Prospectus with Table of Contents and Sample Chapters
 - *Elementary Engineering Mathematics* (February-March 2007)
 - Proposal with Table of Contents and Sample Chapters

 - **Textbook Reviewer for Springer UK Publishers**
 - *Practical MATLAB® for Engineers* (June-July 2006)
 - Book proposal with Draft Contents and Sample Chapters
-

- **Manuscript Reviewer for IEEE Transactions on Systems, Man and Cybernetics**
 - Manuscript: "*A Scalable Interest Management for Distributed Virtual Environments*"
 - 27-page research manuscript for peer-reviewed publication (March-May 2005)
 - Contacted by IEEE Transactions Editor for reviewing

 - **International Journal of Vehicle Design**
 - "*An Exploratory Study for the Effect of 15 years of Progress on Driver Situation Awareness*"
 - 25-page research manuscript for peer-reviewed publication (February-April 2005)
 - Contacted by Inderscience Publishers

 - **Textbook Reviewer for Great Lakes Press**
 - An Introduction to Technical Problem Solving with Matlab (2005)
 - First Edition Textbook, 8 chapters; Written Review

 - **Textbook and Media Evaluator for McGraw-Hill Publishers**
 - Textbook 2: *Statistics for Engineers and Scientists*
 - Subject, chapter, figure and software analysis (March 2005)
 - Textbook 1: *Introduction to Engineering through Real-World Case Studies*
 - Multiple Chapters reviewed (November 2004-January 2005)
 - Electronic Format Case Studies on CD

 - **Manuscript Reviewer for IEEE Transactions on Systems, Man and Cybernetics**
 - Manuscript: *A Driver Drowsiness Fusion Model Based on Least Squares Regression* (2007)
 - Manuscript: *Preliminary Study of Behavior and Safety Effects of Driver Dependence on a Warning System in a Driving Simulator* (2004)
 - Evaluate Research manuscripts for peer-reviewed publication
 - Contacted by IEEE Transactions Associate Editor for reviewing

 - **Textbook Evaluator for Pearson Prentice Hall Publishers**
 - Textbook: *The Entrepreneurial Engineer*
 - 11 Chapters (April-May 2004)

 - **Textbook Evaluator for Pearson Prentice Hall Publishers**
 - Textbook: *Introduction to Industrial Engineering*
 - 13 Chapters (April-May 2003)

 - **Reviewer for Transportation Research Board (2005 & 2006)**
 - Follow-up Reviews for TRB from 2006 submissions, final review round for 2007
 - Driving Performance and Simulation Papers, paper candidates for publication
 - Follow-up Reviews for TRB from 2005 submissions, final review round for 2006

 - **Reviewer for Frontiers in Education (2007-2008)**
 - Abstracts from multiple areas of concentration
 - Papers from multiple areas of concentration
-

➤ **Reviewer for Human Factors and Ergonomics Society Publication Submissions**

- Virtual Environments Technical Group (2011)
- Cognitive Engineering and Decision Making Technical Group (2011)
- Forensics Professionals Technical Group, Product Design Technical Group (2011)
- Virtual Environments Technical Group (2010)
- Cognitive Engineering and Decision Making Technical Group (2010)
- Outstanding Student Paper Award, Candidates' papers CEDM Division (2009)
- Safety Technical Group, Forensics Technical Group, Product Design Technical Group (2009)
- Cognitive Engineering and Decision Making Technical Group, Safety Technical Group (2008)
- Healthcare Technical Group, Safety Technical Group (2007)
- Safety Technical Group, Virtual Environment Technical Group (2006)
- Cognitive Engineering and Decision Making Technical Group (2006)
- Virtual Environments Technical Group, Healthcare Technical Group (2005)
- Medical Systems and Rehabilitation Technical (2002 -2004)
- Outstanding Student Paper Award, Candidates' papers (2001-2002)

➤ **Reviewer for American Society for Engineering Education**

- New England ASEE Division Papers (2011)
- New Engineering Educators Division Abstracts & Papers (2011)
- Freshman Programs Division Abstracts & Papers (2011)
- New Engineering Educators Division Abstracts & Papers (2010)
- Freshman Programs Division Abstracts & Papers (2010)
- Mechanical Engineering Division Papers (2010)
- Environmental Engineering Division Abstracts & Papers (2009)
- Freshman Programs Division Abstracts & Papers (2009)
- Mechanical Engineering Division Papers (2009)
- Environmental Engineering Division Abstracts & Papers (2008)
- Educational Research Methods Division, Papers (2008)
- Freshman Programs Division Abstracts & Papers (2008)
- Educational Research Methods Division, Papers (2007)
- Freshman Programs Division Abstracts & Papers (2007)
- Industrial Engineering Division Abstracts & Papers (2007)
- Freshman Programs Division Abstracts & Papers (2006)
- Freshman Programs Division Abstracts & Papers (2005)
- Engineering Design Division Abstracts & Papers (2004)
- Multimedia Submissions (2003)

SERVICE AND PROFESSIONAL DEVELOPMENT
~ SERVICE OUTSIDE NORTHEASTERN UNIVERSITY ~

- **Notary Public, Commonwealth of Massachusetts**
 - Sworn in 30 July 2003, recommissioned in 2010
 - Verify and notarize official documents in Department and College and for Public

- **Composed Foreword for the book *Clearing and Cleansing the Houses of Clutter***
 - Chosen by author Milton Williams to introduce the book and his vision, Published 2010
 - Electronic Version found online at <http://www.smashwords.com/extreader/read/15582/5/>
→ [inthe-flow-clearing-and-cleansing-the-houses-of-clutter](#)

- **Volunteer: Camy 5K David 3K Road Race**
 - Combination Run/Walk for Cancer Benefit, 2003-2009
 - Assist with administration, records, filming, announcements, and awards
 - Have been Official Starter for Event

- **Relay for Life Cancer Awareness Event**
 - Supervised and Managed Relay Vending Operation, 2005 & 2006, Foxborough, MA
 - Volunteer for Relay Vending Operation, 2004, Foxborough, MA
 - Accountable Team Sponsor 2001 and 2002, Franklin, MA
 - Overnight Chaperone for Relay Team, 2001, Franklin, MA

- **Girl Scouts of America: Speaker and Presenter, 2001, 2005, 2009**
 - Volunteer participant and presenter at Career Fair
 - Conducted “What is an Engineer?” Sessions

~ MEMBERSHIPS AND AFFILIATIONS ~

- Institute of Industrial Engineers, *Member*
- Society of Automotive Engineers, *Member*
- National Defense Industrial Association, *Member*
- Human Factors and Ergonomics Society, *Member*
- American Society of Mechanical Engineers, *Member*
- American Society for Engineering Education, *Member*
- Kappa Delta Pi National Academic Honor Society, *Nominee, Member*
- Society of Women Engineers and SWE Northeastern Chapter, *Member*
- Collegiate Alliance for the Study of Human Performance, *Former Officer*
- Rehabilitation Engineering and Assistive Technology Society of North America, *Member*
- Human Factors and Ergonomics Society, *Chapanis Outstanding Student Paper Award, 1998*
- Interservice/Industry Training, Simulation & Education, *Fellowship Award Recipient, 1998/1999*
- Rhode Island Sports Medicine Consortium; *Founding Member & Former Executive Board Member*

REWARDS OF TEACHING AT NORTHEASTERN:
~ RECOGNITION, AWARDS, NOMINATIONS, AND OPPORTUNITIES ~

➤ **Rewards of Teaching in the College of Engineering at Northeastern University**

The contents of this section signify the genuine rewards of my work that cannot be easily quantified; some are more visible than others. To learn that you may be regarded as effective and respected in your work is meaningful and humbling, but there is always more to learn, room for authentic improvement. Beyond university course evaluations, the various assessments by students, peers and other professionals are valuable and informative and serve as a basis for continual personal improvement. These are valued greatly and all genuine feedback is rewarding and enlightening. In addition, notes, letters, and e-mails from students and colleagues add to the richness of the teaching experience.

➤ **Students Speak Teaching Recognition (2011)**

- Faculty highlighted through student evaluations
- Determined through Teacher Rating and Course Evaluation submissions for the academic year

➤ **Teaching Award: Outstanding Teacher of First Year Engineering Students (2003, 2007, 2011)**

- Awarded Spring academic year, Northeastern University
- Determined from survey of first-year engineering students

➤ **Northeastern University Excellence in Teaching Nominations (2007, 2009, 2011)**

- Written nominations submitted by students
- Awards considered across Northeastern University

➤ **Undergraduate Research Grants Awarded to Student Advisees (2007-2011)**

- Opportunities to work one-on-one with students outside the classroom
- Described in detail under Mentoring Activities
- Listed above under Grants – 11 awarded

➤ **Selected to participate in Student-Centered Events, based on student recommendations (2011)**

- Faculty Dinner Series: Student-initiated invitation from Residence Directors of Int'l Village
- Integrate w/ Res Life: Student-initiated Invitation from Dean of Cultural, Res and Spiritual Life

➤ **Highlighted Faculty Member for Institute of Industrial Engineers, NU (2008-2009)**

- Chosen for faculty profile by NU-IIE students
- Interview conducted and displayed on IIE Bulletin Board

➤ **Teaching Award: Industrial Engineering Professor of the Year (2005, 2006, 2007, 2008)**

- Determined from surveys of Mechanical and Industrial Engineering students
- Awarded Spring 2008 for 2007-2008 academic year, Northeastern University
- Awarded Spring 2007 for 2006-2007 academic year, Northeastern University
- Awarded Spring 2006 for 2005-2006 academic year, Northeastern University
- Awarded Spring 2005 for 2004-2005 academic year, Northeastern University

- **Project with Honors Students: NU Research and Scholarship Exposition (2011)**
 - Mechanical engineering students Anthony Maiorano and Joe Zimo, representing their team of colleagues presented research on designing devices for service dogs and their human partners

- **Northeastern Engineering Design Project featured in Boston Globe Article (Front page, Feb 2011)**
 - *Guiding an idea from lesson to reality: Service dog project by NU first-year engineering students*
 - Highlighted my student team working to make life better for the disabled who use services dogs

- **Winner of Outstanding Paper Award at ASEE, Freshman Programs Division and Council (2011)**
 - Author on research paper presented with Sue Freeman, Stanley Forman, and Rich Whalen, NU
 - Paper on academic and personal value of various types and levels of service learning projects
 - 1st place in Professional Interest Council (10 Divisions), and 1st in First-year Programs Division

- **Winner of Best Presentation Award at ASEE, Freshman Programs Division (2011)**
 - Author on paper presented with Gateway Team members Sue Freeman and Rich Whalen
 - Paper researching the effects of e-tasking with mobile electronic devices in the classroom

- **Winner, Outstanding Paper Award at ASEE: 1st Overall in Annual Conference (2011 for 2010)**
 - First author on research paper presented with NU Gateway Team members Sue Freeman and Rich Whalen, also assisted by Undergraduate Industrial Engineering student Rebecca Payne
 - As above, paper assessing successful students on developing 'grit', and resourcefulness
 - 1st place in Professional Interest Council (10 Divisions), and 2nd in First-year Programs Division

- **Winner of Best Presentation Award at ASEE, Freshman Programs Division (2011 for 2010)**
 - First author on paper presented with Gateway Team members Sue Freeman and Rich Whalen
 - Paper assessing successful students on developing 'grit', resourcefulness, and perseverance

- **Northeastern Engineering Program featured in Boston Globe Article (Front page, September 2008)**
 - *In college, it's who you know: Instructors take pains to learn students' faces*
 - Highlighted College of Engineering's commitment to connect with their students

- **FIRST Robotics, Northeastern Team (2007 & 2008)**
 - Provided support and refreshments at team meetings
 - Letters from Robotics Team thanking for support provided to their team
 - Personally Invited by the Northeastern Team as a VIP to the Boston Robotics Competition

- **Publication Nominated for Outstanding Paper Award, ASEE Environmental Engineering (2009)**
 - Collaborated and presented with a NU student Ethan LaRochelle through UG Research Grant
 - Paper published in Proceedings of the American Society for Engineering Education, June 2009
 - Educational Benefits of Engineers w/o Borders mapping to ABET outcomes and objectives

- **Winner, Outstanding Paper Award at ASEE, New Engineering Educators Division, 3rd place (2008)**
 - First author on research paper presented individually; written with NU Student Services Advisor Maggie Bates and Undergraduate IE Engineering students Brittany Damon and Alison Reppy
 - Paper assessing best balance of traditional lecture and active learning in engineering education

 - **Winner of Outstanding Paper Award at ASEE, Freshman Programs Division (2007)**
 - Author on research paper presented with NU Gateway Team members Sue Freeman and Rich Whalen, collaborated with John Estell and JD Yoder, Ohio Northern
 - Paper on adapting, adopting, and assessing a hands-on teaching module for Engineering Design

 - **Publication Nominated for Outstanding Paper Award, ASEE Freshman Programs Division (2006)**
 - Collaborated with Sven Bilén, Penn State to implement and evaluate a new class technique
 - Program and paper: *The One-Minute Engineer: Getting Design Class out of the Starting Blocks.*

 - **Winner of Outstanding Paper Award at ASEE, Environmental Engineering Division (2005)**
 - Author on paper presented with Maurice Aburdene from Bucknell and Sue Freeman, NU
 - Paper on Empty-Handed Demos: Supplementing high-technology in the classroom with innovative and effective minimum-resource teaching methods

 - **Winner of Best Presentation at ASEE, Environmental Engineering Division (2006 for 2005)**
 - As above, paper presented with Maurice Aburdene from Bucknell and Sue Freeman, NU
 - Illustrated and presented Empty-Handed Demos across multiple disciplines

 - **Winner of Best Presentation Award at ASEE, Freshman Programs Division (2006 for 2005)**
 - First author on paper presented with Gateway Team members Sue Freeman and Rich Whalen
 - Paper on Integrated Project in Matlab and C++ in Engineering and Problem-Solving Course

 - **Project with Students: NU Research and Scholarship Exposition (2007)**
 - Mechanical and Civil Engineering students Emily Rumberger and Taylor Dennerlein conducted research and presented a Poster at the Research and Scholarship Exposition on the educational and individual effects of the Engineers Without Borders program here at Northeastern
 - Work was continued by Ethan LaRoche and presented to other universities and ASEE

 - **Honors Project with Students: NU Research and Scholarship Exposition (2006)**
 - Mechanical and Industrial engineering students Erica Kemp & Mike Jenkins worked with quadriplegic subject and presented a Poster at Research and Scholarship Exposition
 - Provisional Patent Application submitted on designed device: stowable wheelchair tray table

 - **Excellence in Mentoring Award (2006)**
 - Nominated and given for work with graduate & undergraduate students outside the classroom
 - Endorsed by Director of Simulation Laboratory and MIE Department chairperson
-

- Letters of recommendation written by students: 1 graduate, 4 seniors, 1 junior, 1 middler

- **Teaching Award: Mechanical Engineering Professor of the Year (2005)**
 - Awarded Spring 2005 for 2004-2005 academic year, Northeastern University
 - Determined from survey of Mechanical Engineering students

- **Honors Project Award with Students: NU Research & Technology Exposition Winner (March 2005)**
 - Northeastern University Outstanding Undergraduate Research Award won with Honors project
 - Project done with student advisees Caitlyn Bosecker and Alex Hussain as part of Honors Theses
 - Provisional Patent Application submitted on designed device for customizable mobile phone

- **Keynote Speaker: Special Program for Experienced Teaching Assistants (January 2005)**
 - Selected to deliver the Keynote Address for Symposium offered by Center for Effective University Teaching for experienced TAs
 - Title of address given: Getting Inspired to Motivate – or is it Motivated to Inspire?

- **Highlighted Faculty Member for American Society of Mechanical Engineers, NU (2002-2004)**
 - Featured presenter at 3 ASME luncheon meetings
 - Chosen for 2003/2004 faculty profiles by ASME students

- **Faculty Panel Member in “What Matters Most” conducted through President’s Excellence Grant**
 - Selected to participate in Student Program called “Nurturing the Spirit”
 - Served as faculty representative discussion participant on maintaining balance in life at NU

~ HIGHLIGHTS OF STUDENT-RELATED MENTORING ACTIVITIES ~

This section provides descriptions and details of work with individual students. Many of the activities seen here are listed above under teaching, but the descriptions provide an overview of the variety of experiences students can have –and what they can accomplish– when working with a professor beyond the structured class setting. As such Independent Studies and Honor Theses earn course credit, while Directed Studies do not and are entirely voluntary on the part of the students.

Industrial Engineering Student Shuntaro Okuzawa (2010) Evaluation of Multiple Human Factors Data Collection Software Applications

Under my guidance, Shuntaro –a Middler Industrial Engineer– conducted an Independent Research Project to search out and evaluate prospects for new software for our Human-Machine Systems course. Along with my Human Factors Teaching Assistant, they thoroughly researched and reviewed programs at other universities to identify what software was being used in Human Factors Engineering courses. Further, they liaised with the various companies, and Shuntaro set up web meetings, demos, and meetings with our Computer Systems personnel and our Industrial Engineering Program Director to help adopt the best, most updated, and cost-effective software package for the research aspect of our Human-Machine Systems Course.

PACT: Project for Assistive Canine Technology (2011) Peter DeVinne, Lexi Hamsmith, Duy Le, Anthony Maiorano, Jordan Rubio, Joe Zimo Awarded 2 Undergraduate Research Grants

Six students from my fall 2010 Engineering Design classes created a team with a goal of designing and creating devices to extend the capabilities and improve the well-being of assistance dogs and the lives of their human partners. They are doing this by furthering their knowledge of how service dogs function through intentional partnership with individuals and organizations that train, work with, or use service dogs. They have presented at the 2011 Research Exposition and been featured in the Boston Globe and NU News. With further research and liaisons with The Center for Community Service and Canines for Disabled Kids, they will apply their knowledge to design and implement products, ideas and/or methods which are deemed practical, desirable and useful.

Industrial Engineering Student Corey Balint (2010) Apprentice in Teaching Digital Simulation

As a senior Industrial Engineer, Corey conducted an Independent Study as an Apprenticeship in Engineering Education and Simulation Development. A primary interest lies in learning to teach in engineering at the university level and he is combining that goal with his aptitude in Digital Simulation. Corey helped to translate procedural computer language from codes I had composed in SIMAN into the Object-oriented simulation application of ARENA. He also assisted in generating lesson plans, served as a peer-learning consultant, and taught a course module under my direction.

Mechanical Engineering Students Ivan Goryachev and Matthew Van Dyke (2009-2010) Each Awarded an Undergraduate Research Grant

These students have participated in the subsequent phase of a project to redesign a photodynamic therapy device for dermatological treatment. Their Directed Study work has involved further research into mechanical and electrochemical elements of light therapy with a view to generating a safe, usable, portable and comfortable treatment techniques. They have conducted extensive patent searches, had meetings with the clinicians and the medical practitioners and generated prototypes for evaluation.

Industrial Engineering Students Corey Balint and Christopher Wishon (2009) Each Awarded an Undergraduate Research Grant

This was an undergraduate engineering education research project with a focus on researching and developing the concept of peers as Quality Managers (QM's) in undergraduate engineering classes. The QM's beta-tested lab assignments and assisted during the given course labs and exercises. Feedback was obtained from Quality Managers as well as from their classmates concerning the value and effectiveness of the QM role with a view to improving the Quality Manager program. This data was analyzed and presented as ASEE on a paper we wrote together.

Industrial Engineering Student Emily Shay (2009) Awarded Undergraduate Research Grant

This was the first step in the redesign of a photodynamic therapy device for dermatological treatment. Emily engaged in the process of doing background investigations, both operational and market research. She conducted usability studies at the doctor's office that uses a current version of the machine and began to make a list of design features that need to be incorporated in the next iteration of the device. She reported to two mechanical engineering students who subsequently moved the project forward into the next design phase for this project.

Electrical Engineering Student Ethan LaRoche (2008-09) Awarded 2 Undergraduate Research Grants Paper accepted and presented at 2008 ASEE, Best Paper nomination

"EWB²: Engineers without Borders: Educationally a World of Benefits". This was an undergraduate engineering education research project following up on the reported effects of the Engineers Without Borders (EWB) program on Environmental Engineering and cultural awareness in the Northeastern Community and at other institutions sponsoring EWB beyond. See "Engineers without Borders: Education within Borders" below. Implications for curriculum development were also part of the project's objectives in alignment with ABET. Paper published in ASEE, Best Paper Nominee.

Industrial Engineering Student Sean Naegeli (2008-2009)

Directed Study in Project Management/Service Learning: This project facilitated communication and collaboration with the City of Boston and Tenacity-an organization that provides Tennis and scholastic programs to Boston students- and the United States Tennis Association to improve the Carter Courts Facility at the edge of Northeastern University campus on Columbus Avenue. Sean succeeded in generating connections, securing commitment, and catalyzing action to move forward on this neighborhood-improvement initiative. An added outcome of this initiative was realized in Sean's further development of communication and liaison skills with a variety of constituent groups.

Industrial Engineering Students Brittany Damon (2007-08) Awarded Undergraduate Research Grant and Alison Reppy (2007-2008) Paper presented at 2008 ASEE, Best Paper Nomination

Directed Study work in Undergraduate Research with Student advisor Maggie Bates related to the balance of Active Learning versus Traditional Lecture across the levels from Freshman to Senior in Engineering education. Research was initiated with a literature search on the effectiveness and motivational outcomes in the selection of course activities and teaching style with respect to the students' level. A survey was developed to identify motivational factors related to learning and participation in the classroom. Analysis of the survey results yielded recommendations for the selective

use of active and experiential learning in engineering courses. Paper published in ASEE, a Best Paper Award Winner.

Industrial Engineering Student Christina Skursky (2007) Recommendations submitted to BHVA

An Independent Study in Outdoor Facilities and Site Planning with the Boston Harbor Walk Commission. Evaluated the pathway, signage and way-finding designs related to visitors traveling along the Harbor Walk trail. Report submitted to the Boston Harbor Visitors Association (BHVA). Christina worked in concert with the BHVA to make design recommendations along the walk.

Industrial Engineering Students Danielle Borsari and Lauren Christison (2007) Design Paper Submitted to IIE 2008 and to College of Engineering for Facilities Planning

A Directed Study in Facilities Planning, conducted a complete facilities planning analysis to redesign Richard Basement for Engineering Labs, shops, and usage by classes and student groups. Paper submitted to Institute of Industrial Engineers as a candidate for the student paper award. Facility recommendations and layout planning options are fact-based and may serve as a reference for future facility planning decisions for the space.

Industrial Engineering Student Mike Pankowski (2007) Labs included in Facilities Planning 2007

An Independent Study in embedded in the Facilities Planning Course. While enrolled in the course, Mike was entirely responsible with me the professor for the installation, management, and usage of the facilities planning software, Proplanner. Also helped compose laboratory exercise, lab solutions, and helped introduce and oversee lab activities in a Quality Manager capacity under my supervision.

Industrial Engineering Student Adam Ginsburg (2007) Work submitted to Contract Collaborator

An Independent Study in Undergraduate Research, beginning with literature review and leading to the development of a risk-assessment tool to evaluate and identify predictors of high-risk situations for automobile operators. Conducted in conjunction with a research proposal with SeaCorp for military applications. Project work was concentrated in Summer 2007, but continued beyond.

Honors Industrial Engineering Students Kelly Seitz and Matt Whalen (2007) Presented at Research and Scholarship Exposition. Work featured in BostonNow publication and online 2008

Team-driven Junior-Senior Honors Project with Thesis, 2007-2008. This pair of students conducted research on perceptions, statistics, and legislature concerning cell-phone usage while driving. The mission was to establish a profile of attitudes and conceptions on this matter and then determine the most effective behavior modification catalysts in terms of curbing dangerous cell phone usage while operating a vehicle.

Electrical Engineering Student Jason Turcotte (2007) Awarded Undergraduate Research Grant 2007

Independent work in Undergraduate Research with Student advisor Maggie Bates related to the use of competitive games in engineering education. Jason developed and piloted an electronic device for educational competition. Proposal accepted for course credit for a 4-credit Independent Study in Electronics Engineering for Educational Application. Project work was started in Summer I Semester 2007 and continued in Fall 2007 with use of the device in the classroom.

Mechanical Engineering Student Emily Rumberger and Civil Engineering Student Taylor Dennerlein (2007) Poster Presentation at Research and Scholarship Exposition 2007

“Engineers without Borders: Education within Borders” An undergraduate engineering education research project designed to assess the effect of the EWB program on Environmental Engineering and Cultural Awareness in the Northeastern Community. Presented at the 2007 Research & Scholarship Exposition

Honors IE Student David Magargee (2005-2007) Presented Poster at Honors Banquet 2007

Worked with David on Honors Project to embark on a software selection journey for the Facilities Planning Course. Through research and several Web-Ex seminars, this culminated in him presenting to the Department Chair, The IE program Chair, the MIE IT coordinator, and a former Professor of the course with a decision matrix and proposal for SW selection—it was approved and purchased and was placed in use in the redeveloped Facilities Planning course I taught in Spring 2006. Thesis completed in Spring 2007. He further assisted in development of laboratory activities, materials, and assignments related to Facilities Planning and Material Handling.

Engineering Freshman Karthik Subramaniam (2006)

Karthik helped review the operation of a newly acquired software program Proplanner with me. He served as a beta-tester and we worked together creating instructions for Laboratories. Karthik is also applied his programming knowledge while participating in development of Lab Activities for the related course. He also volunteered to learn about the class topics to be of more value to the project.

Electrical Engineering Student Kevin Eldridge (2005-2006) Project work adopted in GEU 111 as an Integrated Programming Project

Worked with Kevin, an Electrical Engineering student, to develop a MATLAB/C++ Integrated Final Project for GEU 111 class. We met each week after his co-op job to work through the project development from “end to beginning” to create a tractable, meaningful project with real-world significance for the students.

Honors Students ME/IE Erica Kemp and IE Mike Jenkins (2005- 2006) Poster Presentation at Research and Scholarship Exposition 2006

Advisor for Honors Thesis to redesign wheelchair components for a semi-Quadriplegic, involving neurological research, human factors data, and Materials analysis to enhance his quality of life by redesigning his weight-shift bars and designing and manufacturing a stowable tray table. They presented at the Research and Scholarship Exposition in March 2006, and filed a provisional patent for their design.

Faculty Sponsor for Erica in Human Factors & Ergonomics Society Student Application

Honors Mechanical Engineering Student Caitlyn Bosecker (2004-2006) Won Outstanding Undergraduate Research Award at Research and Technology Exposition 2005

Worked with Caitlyn and Honors Student Alex Hussain in 8-credit Honors Project on Cell-phone usability analysis, user profiling and design specifications.

Also helped redesigned Seat for MiniBaja all-terrain Vehicle as part of her required Advanced Writing for the Disciplines Paper– The seat was a success in terms of human factors principles: fit, comfort angle, vibration, shock absorption.

Faculty Sponsor for Caitlyn in Human Factors & Ergonomics Society Student Application

Honors Mechanical Engineering Student Alexander Hussain (2004-2006) Won Outstanding Undergraduate Research Award at Research and Technology Exposition 2005

Worked with him and Honors Student Caitlyn Bosecker in 8-credit Honors Project on Cell-phone usability analysis, user profiling and design specifications.

Worked to obtain Human Subjects IRB Approval and continuations. Cell-phone Project became winning Capstone Project.

Faculty Sponsor for Alex in Human Factors & Ergonomics Society Student Application