

# DONALD RUSSELL PETERSON

Director of the Division of Safety Research and Distinguished Consultant  
National Institute for Occupational Safety and Health (NIOSH)  
Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS)

Adjunct Professor, Industrial and Management Systems Engineering  
West Virginia University, Morgantown, WV

Visiting Professor, Institute of Sound and Vibration Research  
University of Southampton, Southampton, UK

## EDUCATION

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- 1996-1999 Ph.D., Biomedical Engineering, University of Connecticut (UCONN), Storrs, CT  
*Dissertation: A Method for Quantifying the Biodynamics of Abnormal Distal Upper Extremity Function: Application to Computer Keyboard Typing*
- 1992-1995 M.S., Mechanical Engineering, University of Connecticut (UCONN), Storrs, CT  
*Thesis: Development of a Parallel Plate Flow Chamber to Study the Fluid Shear Effects on Living Cells*
- 1988-1992 B.S., Mechanical Engineering with Distinction (Honors), Double Major in Aerospace Engineering and Biomedical Engineering, Minor in Dramatic Arts, Worcester Polytechnic Institute (WPI), Worcester, MA  
Major Qualifying Project (Senior Thesis): *Arterial Stenosis Models*  
Interactive Qualifying Project (Junior Thesis): *Lunar Commercialization: Application of Life Support Sufficiency Project (Minor Thesis): Production Clockwork*

**First Generation College Student** with extramural activities in:

- *NCAA Division III Athletics* - Football, Golf, Track and Field
- *Fraternity* - Sigma Phi Epsilon (served as Fraternity Chaplain)

## LEADERSHIP POSITIONS

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- 2024 - Director and Distinguished Consultant, Division of Safety Research (DSR), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control (CDC), US Department of Health and Human Services (HHS)
- 2020-2023 Acting Director, *new* Biomedical Engineering Program, College of Engineering and Engineering Technology, Northern Illinois University (NIU)
- 2017-2023 Dean, College of Engineering and Engineering Technology, NIU
- 2014-2017 Director, Texas A&M University - Texarkana (TAMU-T) Regional Division, Texas Engineering Experiment Station (TEES), Texas A&M University System
- 2014-2016 Dean, College of Science, Technology, Engineering, Mathematics, and Nursing, TAMU-T
- 2014 Founding Co-Director, Innovation Studio for the Connecticut Institute for Clinical and Translational Science (CICATS), Univ. of Connecticut Health Center (now UCONN Health)
- 2013-2014 Interim Head, *new* Dept. of Biomedical Engineering, Schools of Medicine and Dental Medicine, UCONN Health Center
- 2010-2014 Director, Undergraduate Biomedical Engineering Program, School of Engineering, UCONN
- 2010-2012 Chair and Program Director, Biomedical Engineering, School of Engineering, UCONN
- 2008-2012 Director, Biomedical Engineering Graduate Program, School of Engineering, UCONN
- 2008-2014 Co-Executive Director, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, CT

- 2004-2010 Project Director, Center for Research, Education, and Technology Evaluation (CRETE), School of Dental Medicine, Farmington, CT
- 1999-2014 Director and Founder, Biodynamics Laboratory, Dept. of Medicine, Div. of Occupational and Environmental Medicine, School of Medicine, UCONN Health Center
- 1996-2014 Biomedical Engineering Coordinator, Ergonomics Technology Center of CT, Dept. of Medicine, Div. of Occupational and Environmental Medicine, School of Medicine, UCONN Health Center

## **ACADEMIC APPOINTMENTS**

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- 2017-2024 Professor, Dept. of Mechanical Engineering, College of Engineering and Engineering Technology, NIU
- 2014-2017 Professor of Engineering, College of Science, Technology, Engineering, and Mathematics, Texas A&M University - Texarkana
- 2009-2011 Associate Professor (*joint*), Dept. of Craniofacial Sciences, School of Dental Medicine, UCONN Health Center
- 2009-2014 Associate Professor, Dept. of Medicine, Div. of Occupational and Environmental Medicine, School of Medicine, UCONN Health Center
- 2008-2014 Graduate Faculty, Public Health and Occupational and Environmental Health Sciences, UCONN
- 2004-2009 Assistant Professor (*joint*), Dept. of Bio-Structure and Function, School of Dental Medicine, UCONN Health Center
- 1999-2014 Graduate Faculty, Biomedical Engineering, UCONN
- 1999-2009 Assistant Professor, Dept. of Medicine, Div. of Occupational and Environmental Medicine, School of Medicine, UCONN Health Center

## **VISITING APPOINTMENTS**

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- 2023-2024 Guest Researcher, Physical Effects Research Branch (PERB), Health Effects Laboratory Division (HELD), National Institute for Occupational Safety and Health (NIOSH), Centers for Disease Control and Prevention (CDC), Morgantown, WV
- 2023 - Visiting Professor, Institute of Sound and Vibration Research (ISVR), University of Southampton, Southampton, UK

## **AFFILIATED AND ADJUNCT ACADEMIC APPOINTMENTS**

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- 2024 - Professor (*adjunct*), Dept. of Industrial and Management Systems Engineering, Statler College of Engineering and Mineral Resources, West Virginia University (WVU)
- 2014-2024 Affiliated Faculty, Dept. of Biomedical Engineering, College of Engineering, Texas A&M University - College Station (TAMU)
- 2014-2019 Affiliated Faculty, Dept. of Biomedical Engineering, School of Engineering, University of Connecticut (UCONN)
- 2014-2017 Associate Professor (*adjunct*), Dept. of Medicine, School of Medicine, UCONN Health Center

## **OTHER LEADERSHIP APPOINTMENTS AND TITLES**

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- 2025 - Director of Standards, Acoustical Society of America (ASA), Melville, NY
- 2022 - Chair, American National Standards Institute (ANSI) Technical Advisory Group (TAG) for ISO / TC 108 on *Mechanical Vibration, Shock, and Condition Monitoring*, American National Standards Institute (ANSI) and Acoustical Society of America (ASA), Melville, NY
- 2021 - Chair, ANSI S2 and S3 Working Group (WG) 39 on *Human Exposure to Mechanical Vibration and Shock*, Acoustical Society of America (ASA), Melville, NY
- 2017-2023 Chair (inaugural), ASTM Committee F48 on *Exoskeletons and Exosuits*, ASTM International, West Conshohocken, PA
- 2015-2017 Chair, Healthcare Research Group, TEES, Texas A&M University, College Station, TX
- 2014-2017 Campus Director for Texas A&M University - Texarkana, NASA Texas Space Grant Consortium, University of Texas at Austin (lead institution), Austin, TX

2013	<u>Interim Program Coordinator</u> (contracted to develop new program in Biomedical Engineering Technology), Springfield Technical Community College, Springfield, MA
2012-2014	<u>Chair</u> , Industry Affairs Committee, Biomedical Engineering Society (BMES)
2011	<u>Co-Chair</u> , Biomedical Engineering Society Annual Meeting, Hartford, CT (~3,000 attendees)
2010-2014	<u>Coordinator</u> of ABET Accreditation, Biomedical Engineering, School of Engineering, UCONN
2009-2011	<u>Campus Director</u> for UCONN, NASA Connecticut Space Grant Consortium, University of Hartford (lead institution), West Hartford, CT
2008-2012	<u>Chair</u> , Biomedical Engineering Graduate Program Committee, School of Engineering, UCONN
2006-2010	<u>Director</u> , Bioengineering Center, UCONN Health Center
2002-2014	<u>Campus Director</u> for UCONN Health Center, NASA Connecticut Space Grant Consortium, University of Hartford (lead institution), West Hartford, CT

## **LEADERSHIP POSITION EXPERIENCE (28 years)**

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**Director and Distinguished Consultant, Division of Safety Research  
National Institute for Occupational Safety and Health (NIOSH)  
Centers for Disease Control and Prevention (CDC), Department of Health and Human Services (HHS)**  
([www.cdc.gov/niosh/divisions-offices/safety-research.html](http://www.cdc.gov/niosh/divisions-offices/safety-research.html))

**2024 -**

The Division of Safety Research (DSR) works to address issues in the modern workplace and is the focal point for traumatic injury research at the National Institute for Occupational Safety and Health (NIOSH). Through its research and science, the DSR identifies, reduces, and prevents work-related injuries and deaths across all industries. DSR research programs are rooted in a public health approach and include injury data collection and analysis, field investigations, analytic epidemiology, human factors and protective technology, safety engineering, and health communications.

- Provide advice and assistance on program scientific policies, activities, and operations
- Serve as an expert advisor to the NIOSH Director and Deputy Director on all matters related to the work of the DSR, including any implications of state and local-level health and safety requirements
- Plan, develop, evaluate, and manage programs in occupational safety and health and in public health science and research
- Provide leadership for the DSR and NIOSH in establishing programmatic goals to ensure the DSR mission is met / exceeded within approved within appropriations / budget
- Establish measurement and analysis systems for units managed to assess efficiency, effectiveness, and compliance with regulatory procedures and requirements
- Identify occupational safety and health research needs, develop priorities to provide the basis for developing effective prevention strategies, and for determining criteria for safety and health standards
- Correlate the various inputs from internal and external organizations addressing the task of identifying specific high-risk occupations and work situations
- Develop multi-year project plans to carry out the agency's mission and goals
- Provide leadership in partnering and liaising, and recommend, review, and advise senior / executive level leaders on advancing the DSR and NIOSH mission and programs
- Build and maintain effective working relationships and national and international partnerships with individuals and organizations on occupational safety and health research, prevention, and health promotion
- Develop and lead high-level scientific collaborations (such as federal agencies, medical schools, schools of public health, WHO, PAHO, foundations, professional organizations)
- Advise senior staff and management on the operational aspects of occupational safety and health research, and scientific and investigations
- Represent the Division and Institute and advance the organization's public health research goals and objectives through partnerships and liaisons with inter-agency and / or cross-entity committees, workgroups, workshops, inter-agency projects, etc.

- Develop goals and objectives that integrate the organization's mission and programs with occupational and public health objectives necessary to successfully achieve mission and implement quality improvements as needed
- In addition, manage and lead the following internal and external NIOSH programs in:
  - **Traumatic Injury Prevent Program** (TIP) - Aims to reduce and prevent work-related death across all industries and provides practical solutions to issues that cause traumatic injuries and deaths including falls, motor vehicle crashes, and workplace violence ([www.cdc.gov/niosh/research-programs/portfolio/traumatic-injury.html](http://www.cdc.gov/niosh/research-programs/portfolio/traumatic-injury.html))
  - **Manufacturing Program** - Aims to reduce occupational diseases, injuries, and fatalities among workers in manufacturing industries and works with partners in industry, labor, trade associations, professional organizations, and academia to protect 4.7M manufacturing workers in the US ([www.cdc.gov/niosh/research-programs/portfolio/manufacturing.html](http://www.cdc.gov/niosh/research-programs/portfolio/manufacturing.html))
  - **Center for Occupational Robotics Research** (CORR) - Aims to enhance safety with robotics in the workplace by providing scientific leadership for the development and use of occupational robots that enhance worker safety and health and by critically monitoring injury trends, evaluating the safety of robotic technologies, and advocating for safety standards ([www.cdc.gov/niosh/centers/robotics.html](http://www.cdc.gov/niosh/centers/robotics.html))

**Acting Director, *new* Biomedical Engineering Program  
College of Engineering and Engineering Technology, Northern Illinois University**

([www.niu.edu/ceet](http://www.niu.edu/ceet))

**2020 - 2023**

Served as the acting Director (during and post-COVID) of the newly established BS program in Biomedical Engineering until a search for a permanent director could be launched. This role involved establishing the vision for the program and advancing the education and curricular structure, enrollment management, expansion of research opportunities and industrial partnerships, and establishing the continuous improvement structure and accreditation.

- Executed and facilitated all program administrative, financial, and planning functions, including faculty and staff hiring and supervision, workload assignment, tenure and promotion evaluations, regular faculty and staff evaluations, and enforcement of university, college, and departmental policies and procedures
- Developed and enhanced industrial contacts and initiatives, facilitated grant and contract activities
- Represented and advocated for the program at the college and university levels
- Oversaw enrollment management and served as major advisor to 26 undergraduate students
- Taught undergraduate courses as needed
- Responsible for establishing and executing the successful pathway to ABET accreditation
- Grew program to more than 90 students within a few years
- Was critically responsive to the growing educational, project, and research needs of the students, including working with students to establish university chapters in the Biomedical Engineering Society (BMES) and Engineering World Health (EWH)
- Aligned the program with strong commitments to equity and diversity among students, faculty, and related organizations

**Dean, College of Engineering and Engineering Technology  
Northern Illinois University**

([www.niu.edu/ceet](http://www.niu.edu/ceet))

**2017 - 2023**

Responsible for the overall academic, administrative, fiscal, and strategic leadership of the College and for ensuring that this interdisciplinary College brings diverse people together with common goals and upholds its critical core values: academic excellence, student and faculty success, and community leadership. By "**Bridging Theory with Practice**", the College teaches students to discover and innovate, solve real-world problems, become engineering leaders, and make an influential difference. The College had 44 expert tenure and tenure-track faculty, 3 full-time instructors, and 24 industry adjuncts, who are committed to academic excellence, inclusivity, leadership, and impact, and had 40 state-of-the-art laboratories, and hundreds of partnerships with industry, students are well prepared for a successful career when they enter the global

workforce. The College had a total of 13 undergraduate and graduate degree programs (B.S., M.S., and Ph.D.) in Biomedical Engineering, Electrical Engineering, Engineering Technology, Industrial and Systems Engineering, Mechanical Engineering, and Mechatronics Engineering, with various emphases offered in each along with various online options. Recent operational expenditures, discounting research, exceed \$7.0M.

- Please see recent Dean's Report at [www.niu.edu/ceet/files/2017-2021-ceet-deans-report.pdf](http://www.niu.edu/ceet/files/2017-2021-ceet-deans-report.pdf)
- Advanced the shared bold strategic vision, mission, and core values of the college (see [strategic plan](#))
- Promoted excellence in teaching and research to support a balanced vision and mission
- Increased and maintained a strong college ranking in U.S. News and World Report (for programs having no doctorate, e.g., from 74 in 2018 to 33 in 2021)
- Facilitated rebranding focus group exercises for the college in collaboration with NIU University Marketing and Simple Truth, with the outcome of a new CEET brand (see [brand](#))
- Led and interacted effectively with faculty, staff, a strong shared governance structure, and faculty and staff unions, as well as with students, alumni, industry, and national and international academic communities
- Facilitated college retreats involving all faculty and staff for the initiation of a new faculty-led strategic plan for the college that contains success metrics and benchmarks
- Created a monthly informal "Coffee & Chat" meeting with staff with the dean, associate deans, department chairs, and program directors, where staff were updated on college activities and can interact directly with college leadership
- Directed the college's multi-million-dollar budget to support its mission and strategic plan and managed the college budget through COVID and through challenging state and university cuts and successfully minimized impact to college units, including the optimization of administrative workflow, resource sharing, and workload distributions
- Enhanced existing, and increased, online offerings, including marketing strategies and new opportunities for revenue generation for the college and the university
- Met regularly with the CEET Student Advisory Council, which is composed of student leaders from competition teams, as well as student clubs and professional society student chapters, as a feedback mechanism on the progress of the college and extra-curricular opportunities for students
- Restructured academic advising to be deeper, more impactful, and individualized for students (called "Precision Advising") to significantly increase retention and graduation rates
- Incorporated use of data analytics with Tableau and APS for business intelligence to analyze and benchmark college performance, including program cost information, tracking student recruitment, admissions, enrollment, retention, and graduation data, and various course metrics such as D-F-W rates
- Developed an engineering learning community that occupies a dedicated dormitory floor, with engineering students having access within the dorm space to specialized extra-curricular opportunities, faculty discussions and seminars, advising, and computers, makerspace, and IoT equipment
- In first two years, established new UG interdisciplinary degree programs in *Biomedical Engineering* and *Mechatronics Engineering* and new PhD degree programs in Electrical Engineering, Industrial and Systems Engineering, and Mechanical Engineering, including an innovative PhD *Industry Fellows Program* (IFP) with national and regional industry partners that allows full-time industry employees to realistically pursue a PhD degree (see [article](#))
- Represented NIU CEET at the national Engineering Deans Institute (EDI) of the American Society of Engineering Education (ASEE) and organized and co-chaired a session on the future of graduate engineering education in 2019 based on the IFP
- Oversaw the redesign of the senior design program (i.e., senior year capstone) for Biomedical Engineering, Electrical Engineering, Mechanical Engineering, and Mechatronics Engineering to link and cross-integrate these disciplines and promote industry-realistic, multidisciplinary student teams (*industry partnerships with this new integrated program have generated nearly \$750,000 in five years*)
- Created a large Senior Design Studio to give senior design students exclusive access to a laboratory that is configured to foster innovation, creativity, and entrepreneurship
- Worked continuously with the college deans from Liberal Arts and Sciences, Education, Health and Human Sciences, Visual and Performing Arts, and Business to foster transformative opportunities involving research, student experiences, joint hires, cross-listed courses, degree programs, etc., such as a joint physics-engineering hire for research and education in particle accelerator physics

- Initiated and advancing articulation relationships with several international institutions in various countries, such as: China (Beihang University, Jiangsu University, Xi'an University of Technology, Zhejiang University of Technology), Czech Republic (Brno University of Technology), France (IMT École Mines Douai et Télécom Lille), India (Amrita Vishwa Vidyapeetham, PSG College of Technology, and other institutions through partnership with the NIU ELS program office), and South Korea (Sejong University), as well as new initiatives in progress with Egypt and the United Arab Emirates
- Expanded college diversity and equity, and promoted inclusive decision-making processes
- Redesigned the office of the Associate Dean for Undergraduate Academic Affairs to oversee and infuse outreach and diversity initiatives throughout the college
- Established a scholarship program that supports Hispanic women in engineering
- Participated in the Association of Public Land-Grant Universities (APLU) INCLUDES (Inclusion across the Nation of Communities of Learners of Underrepresented Discoverers in Engineering and Science) project to increase faculty diversity
- Developed a portfolio of external partnerships that overlap with many aspects of the college and align with the college's DEI strategies, including with Fermi National Accelerator Laboratory and Collins Aerospace
- Established and/or enhanced engineering articulation agreements with several community colleges within the upper Midwest region, including a focus on diversity and the recruitment of women and under-represented minorities
- Established collaborative contacts within regional school districts regarding outreach and recruitment strategies for high school students interested in engineering, especially female and minority students, and pursued a dual credit "Introduction to Engineering" course offered by college faculty at regional high schools
- Achieved the Bronze Award in the *ASEE Diversity Recognition Program* (ADRP) for sustaining and advancing the college's DEI mission, vision, and values
- Enhanced and expanded the research profile of the college by fostering innovation, entrepreneurship, and engagement with industry, government agencies, military, academic, and public communities
- Authored and submitted a successful application for NIU, and the college, to join the NASA Illinois Space Grant Consortium
- Doubled research grant funding, with faculty supported for grant submissions that totaled more than \$25M per year with faculty receiving and NSF Early Career Award and NIH Early Career Award
- Partnered with Hanover Research to increase grant submission abilities and agilities of college faculty
- Created and maintained strong relationships and connections with industry in and around Illinois and Chicagoland
- Facilitated and maintained strong relationships and connections with the various federal funding agencies, as well as with Fermi National Laboratory and Argonne National Laboratory, including the exploration of custom graduate certificate programs and expanded involvement in national laboratory research and application thrust areas
- Developed and supported faculty, staff, and student partnerships with local, state, and regional business communities
- Worked with faculty to invigorate various research facilities, including the expansion of industry, state, and federal contacts to stimulate high-quality research and applications for funding from industry, government, and military
- Built and supported partnerships with regional, national, and international companies, such as: Boeing, Bourn and Koch, Collins Aerospace, ComEd, Concentric, Crane Composites, EDF Renewable Energy, Harley-Davidson, Harting, Hydro-Force, Ideal Industries, Instrument Associates, Invictus Medical, Ipsen, LEDiL, Midwest Keyless, Mitsubishi Electric Automation, Mitutoyo Advanced Manufacturing, Moxi Solar, NVIDIA, OMRON Panther Industries, PDT, SDA Consulting, Sears Seating, Sram, Stradis Healthcare, Supply Chain Management Consultants, Thermamax, Ultrasonic Power Corporation, Walmart, Woodward, etc., etc., to establish research and project opportunities for faculty and students
- Implemented up-to-date safety and security protocols for proper operation and access for all laboratories
- Hosted several meetings with state agencies for economic development, such as the Illinois Department of Community and Economic Opportunity (DCEO) and Intersect Illinois

- Participated in Economic Roundtables with Congresswoman Cheri Bustos (Illinois 17<sup>th</sup> Congressional District) to discuss how CEET plays an integral role in the regional and state economy and helped to facilitate the visit by Congressman Randy Hultgren (Illinois 14<sup>th</sup> Congressional District) to NIU regarding engineering intrapreneurships
- In working with NIU's new Director of Innovation Partnerships and Technology Transfer, established working relationships with the DoD for innovation and translation initiatives (e.g., USAF AFWIC and APEX programs) and with municipalities for innovation districts for technology incubation and growth (e.g., Aurora, IL)
- Strengthened the emphasis on innovation and entrepreneurship within the college, with NIU receiving a national ranking of 3<sup>rd</sup> for "Impact on Innovation Productivity" by the George W. Bush Institute and the Opus Faveo Innovation Development consulting firm
- Visits to Washington D.C. with NIU federal government relations advocate for outreach to the federal government regarding NIU CEET research, education, and workforce readiness activities
- Developed external relationships and fundraising opportunities in support of the college and its programs and work with alumni and donors on college advancement
- Worked closely with the college's Engineering and Technology Alumni Society (ETAS) for student team funding and broader alumni engagement and tracking
- Ongoing advancement and alumni initiatives over a three-year span involving meetings with corporations and alumni within the region and nationally, with recent commitments totaling more than \$5M

**Chair, Healthcare Research Working Group in Texas Engineering Experiment Station ([tees.tamu.edu](http://tees.tamu.edu))  
Texas A&M University - College Station**

**2015 - 2017**

**Director, TEES Regional Division at TAMU-T**

**2014 - 2017**

Served as the TEES regional division director for A&M-Texarkana, which is a 100-year-old A&M University institution that has been performing, facilitating, and overseeing high-end engineering research and technology development to address state and national problems. TEES partners with industries, communities, government agencies, to develop solutions to improve quality of life, foster economic development, and enhance education.

- Represented TAMU-T in the regional divisions group
- Identified and created internal and external collaboration opportunities for TAMU-T faculty and students in order to build research capacity and create and stimulate economic impact
- Worked with TEES to identify research and translational opportunities for faculty and students across the TEES network
- Served as Chair for Healthcare research for all of TEES and establish an increase in funded state-wide collaborations for high-end healthcare and medical technology research – involved organizing and conducting regular system-wide meetings for research and translation in healthcare, organizing and chairing technical sessions at annual research conferences, and assisting and fostering collaborative grant proposal submissions and post-award research and translation management

**Dean, College of Science, Technology, Engineering, Mathematics, and Nursing**

([web.archive.org/web/20161105061251/http://tamut.edu/Academics/Colleges-and-Departments/STEM/index.php](http://web.archive.org/web/20161105061251/http://tamut.edu/Academics/Colleges-and-Departments/STEM/index.php))

**Texas A&M University - Texarkana**

**2014 - 2016**

The learning-centered, integrated, transdisciplinary College of STEM and Nursing had several undergraduate and graduate degree programs in Biology, Biotechnology, Chemistry, Computer Science, Electrical Engineering, Kinesiology, Mathematics, and Nursing, with various concentrations offered in each of these programs, such as computer engineering, nursing administration or education, as well as teacher certifications in the sciences and mathematics. The annual operational expenditures, discounting research, were complex and exceeded \$5.0M. The College had 26 core faculty (tenured, tenure-track, or in-residence), more than 10

adjunct faculty, and 4 support staff who contributed to its multi-disciplinary programs. Under the strategic growth plan under my leadership, the College experienced a 20% increase in size in 2.5 calendar years.

- Provided visionary leadership to accelerate the rise of this College to prominent state, regional, and national recognition, especially through consistent engagements with government and academic institutions and through frequent marketing and communications
- Created compelling visions for ongoing advancement and innovative expansions of the College, including practical increases in budgets, new building acquisitions, and utilization of existing infrastructure
- Worked with the President, Provost, and Dean of Research in planning and coordinating strategic and tactical goals for the College
- Established cross-discipline collegiality and a *let's-get-things-done* attitude within the College, including administrative and financial support for new and ongoing initiatives
- Fostered transparency and enhanced faculty shared governance
- Supervised all support staff as well as conduct annual evaluations of faculty and staff
- Promoted and support revolutionary and ambitious advancements in the curricula of the College that ensures cutting-edge real-world education, emphasizes multi-disciplinarity, and promoted student success by lowering attrition through enhanced student advising and practical student learning communities
- Identified new financial and facility resources to support existing and new faculty in their research, instruction, and professional development, including the creation of two centers of excellence - the STEM Innovation Laboratory and the STEM Student Project Studio - that also promote the mission of the College and hands-on experiential learning for students
- Facilitated cross-disciplinary and team-centered experiential environments with team-based learning and problem solving, especially within mentored student research, capstones, and senior designs from all STEM and Nursing programs
- Developed and implemented with faculty a College-wide strategic growth plan in 2015 to provide investments in updating educational equipment and facilities and to expand the College, involving the increase in faculty numbers and the development and inauguration of 4 new B.S. degree programs for AY16-17 (Biotechnology, Chemistry, Kinesiology, and Nursing), 1 new B.S. degree program *tentatively* in AY17-18 (Paper and Bioprocess Engineering), and 4 targeted degree programs for AY18-19 and 19-20 (B.S. in Biomedical Engineering, B.S. in Mechanical and Mechatronics Engineering, and M.S. in Electrical Engineering, and M.S.N. in Family Nurse Practitioner)
- Restructured academic advising to promote curricular efficiency and meaning, especially in career guidance and mentorship, and progressively eliminated unnecessary curricular disruptions that can lead to student drop out
- Worked with University admissions to recruit diverse and motivated students to stably and realistically increase College enrollment
- Set the precedence to increase the diversity of the faculty, as the College rapidly expanded, by progressively supporting and encouraging the consideration of diverse applicants
- Worked to introduce industrial and professional certification programs offered by the College
- Oversaw all state, regional, national, and specialized accreditations in each discipline represented within the College, including regular presentations on assessment outcomes
- Successfully aligned, and led, the College through the reaffirmation of regional accreditation by SACSCOC
- Revised advisory boards to better align the College with regional industries and partners, alumni, and potential donors
- Initiated and facilitated the process for the *initial* ABET accreditation for the Computer Science and Electrical Engineering degree programs; with a successful official ABET visit in October of 2016
- Facilitated and assisted with the approval of the new four-year B.S. in Nursing by the Texas Board of Nursing, the successful CCNE accreditation of the M.S. in Nursing, and the pending CCNE visit for the B.S. in Nursing in the spring of 2017
- Established, and continuing to expand, state-wide community college partnerships on student transfer articulation for all STEM degree programs
- Created learning communities between STEM disciplines, such as between parallel Chemistry and Mathematics courses structured to have overlapping course and lab materials and focused study sections

- Leveraged membership in the A&M System to create the System's first shared Ph.D. engineering program with the flagship campus in College Station (no engineering Ph.D. program at TAMU-T)
- Created new experiential learning opportunities for students, including capstone experiences in all degree programs and capstone-like challenges offered within the freshman through junior years to prevent attrition and the "sophomore slump"
- Worked to build meaningful and functional international academic and research relationships for faculty and students with academic institutions in China, Japan, and countries in Central and South America
- Created and hired the University's first ever STEM Professor of Practice who assisted the college with the development of multidisciplinary experiences for students and faculty, including collaborations, internships, cooperative design efforts, capstone and senior design initiatives, and novel student projects and research initiatives
- Established an Engineer-in-Residence Program, where professionals from industry spend time on campus to connect with sponsored project teams, provide lectures, and mentor students
- Developed strong overlaps with regional K-12 STEM educational initiatives, including working to reinforce/increase female and minority engagement within the STEM disciplines
- Enhanced contact with the growing base of alumni, especially contacts that may lead to student and opportunities for the College
- Responsible for short- and long-range strategic planning and development of instructional and cooperative enterprises, including engaging in fundraising and identifying and obtaining grants and contracts
- Facilitated the professional and scholarly growth of the faculty inside and outside of the University, particularly with the junior faculty
- Established and maintained strong cooperative relationships with the regional communities and industries, especially to pursue, define, increase, and sustain student and faculty opportunities
- Developed a significant relationship for the College with the prestigious 100+-year-old Texas Engineering Experiment Station (TEES) agency, including their formal recognition of TAMU-T research and student success, that created new opportunities for faculty to participate in state-wide research collaborations
- Leveraged partnerships with regional companies, clinical entities, and entrepreneurs that have led to significant increases in sponsored research, projects, and design challenges for faculty and students
- Established translational pathways for students and faculty, including IP management, patenting, small business formation, import/export control, incubation, etc., using my own developed technologies and methodologies to create the pathways (two provisional patents and six technology disclosures), as well as worked to establish a business incubator and an Angel Investor Network (AIN) for northeast Texas
- Worked with University leadership to obtain two new buildings: \$32M in state appropriations for a 58,000 ft<sup>2</sup> academic building (for Nursing and STEM) and a Public-Private Partnership (P3) formed with partners throughout the Texarkana community for an \$11M, 38,000 ft<sup>2</sup> recreation center that now houses the College's new Kinesiology program
- Worked with the Chancellor of the A&M System to put forth the newly proposed B.S. in Paper and Bioprocess Engineering program as a \$1M Legislative Appropriations Request (LAR) to the State of Texas in early 2017, in order to support the program and increase the presence/impact of the industry within the state

#### **Founding Co-Director, Innovation Studio**

#### **Connecticut Institute for Clinical and Translational Science (CICATS)**

([digitalcommons.lib.uconn.edu/cgi/viewcontent.cgi?article=1000&context=uchccicats](http://digitalcommons.lib.uconn.edu/cgi/viewcontent.cgi?article=1000&context=uchccicats))

#### **University of Connecticut Health Center**

**2014**

Nominated and selected as a Founding Co-Director of a newly established Innovation Studio that brought together relevant research experts to provide guidance and consultation to investigators in the field of translational research. Its purpose was to assist with hypothesis generation, study design, implementation, analysis and interpretation, as well as manuscript and research proposal development. It also assisted with guidance and consultation to help investigators explore possibilities of applying research findings to unmet clinical needs and identify opportunities for dissemination of relevant findings into practice or entrepreneurial ventures.

- Formed and led a standing team to operate the Innovation Studio
- Positioned the Innovation Studio as a critical and beneficial resource to the community and state
- Determined investigator needs and developed innovative programs to accommodate those needs
- Worked closely with faculty, staff, and Core Interest Groups to respond to service requests
- Devoted effort to build a strong regional and national image for CICATS as an integrated home for researchers
- Identified appropriate context for disseminating research findings
- Recommended additional tests in order to successfully introduce research findings into real-world settings
- Examined unmet clinical needs pertaining to the findings of various research projects
- Connected investigators with local funding agencies, such as Connecticut Innovations (CI)
- Recommended an approach for translation of study findings and commercializing innovations
- See [history](#) and [website](#)

**Interim Head, (new) Department of Biomedical Engineering  
Schools of Medicine and Dental Medicine, University of Connecticut Health Center  
2013 - 2014**

Appointed as the Health Center's first Head for the newly established, cross-campus Biomedical Engineering Department in the Schools of Medicine and Dental Medicine. I had conceptualized, proposed, and facilitated this new structure, which is now jointly administered, and sustained, with the Schools of Engineering, Medicine, and Dental Medicine.

- Facilitated and enhanced recruitment of exceptional faculty members
- Enhanced the recognition and prestige of the BME faculty
- Improved the recruiting success of graduate and undergraduate students
- Enhanced the success of development activities closely aligned with biomedical engineering
- Leveraged and enhanced the likely success of grant proposals submitted to NIH, NSF and other agencies that recognize the unique trans-disciplinary nature of the BME research efforts underway
- Affirmed the University's commitment to building world-class biomedical engineering undergraduate and graduate degree programs
- Enhanced the University's prestige as an important destination for students, faculty, and researchers who seek to engage in top-tier biomedical engineering education, research, and entrepreneurial endeavors
- Directed and managed the undergraduate and graduate BME education program
- Managed the BME research staff and facilities located at the Health Center campus
- Initially structured the Promotion, Tenure, and Reappointment (PTR) processes for UCONN Health Center-based BME faculty whose primary affiliation is within either the School of Medicine or the School of Dental Medicine
- Managed the graduate BME education program at the UCONN Health Center campus
- Managed the BME research facilities located at the UCONN Health Center campus
- Provided strategic planning for, and facilitation of, the research and educational agenda of the BME Department
- Determined the teaching assignments and loads of BME faculty members
- Managed of the joint BME Courses and Curriculum Committee
- Administered all BME faculty performance evaluations
- Worked closely with the Committee of Deans and the Provost to ensure the success of the new cross-campus Department and its faculty

**Undergraduate Program Director, Biomedical Engineering  
School of Engineering, University of Connecticut  
2010 - 2014**

As the program entered a period of incredible transition into becoming a new cross-university department between the schools of engineering, medicine, and dental medicine, I served as the Undergraduate Program

Director for an enrollment of about 350 undergraduate students. (Here, my role and responsibilities were essentially equivalent to that of the overall chairmanship as defined in the description immediately below, except for the graduate portion which continued to grow and was over 100 graduate students.) Following my chairmanship of the overall program (undergraduate and graduate), I focused on building and maintaining the strength of the Undergraduate Program, especially during this critical transition time.

- Served as Academic Advisor to almost 60 Honors undergraduate students (number of advisees have ranged between 55 and 100)
- Course instructor for 2 courses in fall of 2013, including the lead instructor of Biomedical Engineering Design I and II which is a two-semester senior capstone design course sequence, and 2 courses for the spring of 2014 (recent – 4 courses, fall of 2012; 4 courses, spring 2013), including the creation of a cutting-edge medical device senior design program involving clinicians, entrepreneurs, and local manufacturers.
- Served as ABET Coordinator for BME, with successful ABET visit in October 2013
- Established new University chapter in the Engineering World Health where undergraduates from any academic background can participate in hands-on experiences of designing and building medical devices intended for the use in developing countries
- Created and established a Biomedical Engineer-in-Residence (BMEiR) Program for the BME Undergraduate and Graduate Programs that regularly brings engineering professionals from industry to campus to work directly with students on projects and career options.

### **Chair and Program Director, Biomedical Engineering School of Engineering, University of Connecticut**

([web.archive.org/web/20120506121635/http://www.bme.uconn.edu/](http://web.archive.org/web/20120506121635/http://www.bme.uconn.edu/))

**2010 - 2012**

The interdisciplinary Biomedical Engineering (BME) Program was home to four tracks: Biomechanics, Biomaterials (including Tissue Engineering and Biochemical Engineering), Bioinformatics, and Biosystems, Imaging, and Instrumentation. The School of Engineering administers an ABET-accredited undergraduate degree in BME as well as M.S. and Ph.D. degrees. The annual expenditures, discounting research were better than \$2.0M during this period. The program had 29 core faculty and more than 30 affiliated faculty (tenured, tenure-track, or in-residence) who contribute to this interdisciplinary program, representing engineering, biomedical science, material science, chemistry, physics, medicine, and dental medicine. By the 2013-2014 academic year, it had four full-time, dedicated staff members, including two academic advisors, with an enrollment of 375 undergraduate students and 100 graduate students.

- Served as Academic Advisor to all Honors undergraduate students (approximately 100 during chairmanship)
- Developed and implemented a program-wide strategic plan in 2010, including investments in updating educational equipment in the BME laboratories and hiring two new assistant professors
- Promoted revolutionary and ambitious advancements in undergraduate and graduate studies in BME to ensure cutting-edge, and real-world, education, including restructuring the multi-disciplinary undergraduate and graduate tracks and curriculums, and the creation, and offering, of new undergraduate and graduate courses to support these changes
- For development and enhancement of the curricula, served as course instructor, or co-instructor, for 8+ courses in 2010-2011 and again in 2011-2012
- Scheduled, reviewed, and organized program and inter-departmental curricula and established progressive advisory programs for all BME students to support changes
- Responsible for the overall direction, coordination, and continuous evaluation, including ABET accreditation involving preparation, management, and maintenance of accreditation materials and requirements
- Solicited, and worked with, input on program direction from faculty and staff, including the facilitation of faculty meetings and the creation of new undergraduate and graduate courses and curriculum committees
- Advanced the recognition of engineering at the University of Connecticut Health Center by fostering collaborations with clinical and basic science faculty

- Developed, enhanced, and promoted working partnerships with leaders of other departments and programs, including the Schools of Medicine, Dental Medicine, and Biomedical Sciences, especially to pool academic resources for true multi-disciplinary educational experiences
- Worked in integrated teams of engineering, medical, and basic science faculty and staff to provide continuous improvement and creativity to the academic mission of the program, including the advancement of the research and teaching missions across multiple UCONN campuses
- Provided visionary leadership and continued the accelerating rise to national recognition, especially through co-chairing the BMES Annual Meeting in Hartford, CT, in 2011 (~3,000 in attendance)
- Publicized all aspects of the BME Program and worked with Undergraduate Admissions to recruit talented and diverse undergraduate and graduate students to increase quantity, and quality, of enrollment
- Organized and scheduled the entire curricula, courses, and teaching assignments for the graduate and undergraduate programs
- Facilitated the professional and scholarly growth of the faculty inside and outside (e.g., University of Hartford) of the university, particularly with junior faculty
- Provided recommendations for hiring of program faculty and staff by creating and operating searches and search committees
- Supervised program support staff, conducted annual evaluations of faculty and staff
- Created and managed complex budgets and schedules, and efficiently and effectively allocated operating budgets and funds to determine where budget cuts could be implemented
- Promoted diversity among program students, faculty, and related organizations, especially by engaging the SWE and SHPE societies
- Increased the diversity of the faculty by targeting and hiring two female assistant professors in 2011
- Advanced the presence of BME throughout the community by partnering with entities such as Hartford Hospital and Connecticut Children's Medical Center on senior design projects and student internships
- Facilitated community engagement through the interaction of faculty and students with regional middle school and high school students, teachers, and guidance counselors regarding STEM careers
- Established two undergraduate BME student chapters in the Biomedical Engineering Society and in the National Biomedical Engineering Honor Society (Alpha Eta Mu Beta) both of which offered seminars, student gatherings and socials, mentoring, etc.
- Worked to increase private and external funding opportunities to expand and enhance the program, including the submission of a GAANN proposal to the Dept. of Education to support diversity and underrepresented populations within the Ph.D. graduate program
- Assisted the Dean and Associate Deans of Engineering and the Associate Deans of the Graduate School in planning and coordinating strategic and tactical academic goals in the Biomedical Engineering Program
- Created compelling visions for the ongoing university advancement of the BME Program, including the increase in operating budget to well over \$1.0M (excluding research) and the move, in November of 2012, to form a new Biomedical Engineering Department that now spans between the Schools of Engineering, Medicine, and Dental Medicine

**Graduate Program Director, Biomedical Engineering  
School of Engineering, University of Connecticut  
2008 - 2012**

During this time, the graduate program was home to five tracks: Biomechanics, Biomaterials (including Tissue Engineering and Biochemical Engineering), Bioinformatics, Physiological and Biomedical Modeling, Clinical Engineering, and Bioimaging and Instrumentation and has M.S. (thesis and non-thesis) and Ph.D. degrees. The program had more than 50 tenured, tenure-track, and in-residence faculty that contribute to this interdisciplinary graduate program, representing engineering, biomedical science, material science, chemistry, physics, medicine, and dental medicine. It has maintained an enrollment above 80 graduate students for several years, one third of which were Ph.D. students.

- Provided program leadership, constructed new bylaws, and advised the deans of engineering and of the Graduate School on program enhancements and new strategies

- Developed and implemented new and enhanced programs, including cross-campus collaborations in education and research, including submission of a GAANN proposal
- Worked with the Schools of Medicine and Dental Medicine to structure and establish an M.D./Ph.D. in BME program along with a training grant proposal (September 2012) to support this initiative
- Established the ability for self-funded, full-time engineers from industry to obtain an M.S. or Ph.D. in the program
- Structured BME graduate tracks to five and led, and facilitated, the development of several new courses within each track
- Redefined the standards in recruitment and increased the recruitment of high-quality graduate students by establishing, and administering, a BME Graduate Admissions Committee with rotating faculty members from all partner Schools within the university
- Established a BME Graduate Student Committee that organized faculty seminars, student gatherings and socials, undergraduate mentoring, etc.
- Served the University and the national and international BME Communities by establishing and providing volunteer and community service opportunities to graduate students to participate in the educational process with K-12 grade students about careers in biomedical engineering and STEM

### **Co-Executive Director, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, CT**

([web.archive.org/web/20140714152107/http://www.beaconalliance.org/index.html](http://web.archive.org/web/20140714152107/http://www.beaconalliance.org/index.html))

**2008 - 2014**

BEACON was a non-profit 501(c)(6) organization consisting of academic and medical institutions, as well as corporations, dedicated to the development and commercialization of new medical technologies. The Biomedical Engineering Alliance and Consortium (BEACON) was a collaborative among private and public entities pledged to developing and delivering commercially viable innovations in biomedical science and associated technologies for global healthcare applications. At the time of my departure, within its network, there were over 35 members from around southern New England and from various parts of the United States.

- Continual expansion of medical device trade association network in Connecticut
- Promoted collaborative research and partnerships among academic, medical, and industry partners in the field of biomedical engineering
- Facilitated the development of new medical device companies by assisting academics and clinicians in developing business plans and commercialization strategies, including intellectual property protection
- Provided consulting services for new/small business development, including academic support about the medical device industry
- Provided educational opportunities through seminars and programs that improve understanding and foster the acquisition of specific knowledge and expertise, including the future of medical devices and biomedical engineering
- Established and maintained links to global organizations focused on biomedical research and development
- Worked with regional universities on BME curriculum and student opportunities (intramural and extramural), with community colleges to develop curriculums in medical device manufacturing and biomedical engineering technicians, and with K-12 institutions, public and private, on establishing STEM academies with an emphasis on engineering and BME in curriculums
- Worked to establish regional medical device innovation gateways to serve as hubs for translational overlap, economic development, and workforce development
- With success before my departure, BEACON became a co-founder of Hartford Health Works in 2015, which is a hub of entrepreneurship and medical device manufacturing that seeks to build upon existing strengths in health care technologies from the region

### **Project Director, Center for Research and Education in Technology Evaluation (CRETE) School of Dental Medicine, University of Connecticut Health Center**

(<https://web.archive.org/web/20041212085039/http://www.biodontics.org/crete.htm>)

**2004 - 2010**

CRETE developed research and educational programs focused on the scientific evaluation of new dental, oral, and craniofacial technologies, while producing a new generation of dental graduates skilled in entrepreneurship, management, technology transfer, and clinical dentistry. It was dedicated to promoting innovation, commercialization, and the development of next-generation technologies, providing resources for research and technology evaluation, addressing academic needs, and overcoming barriers to the adoption of innovative technologies in the dental field.

- Responsible for overseeing and managing aspects of product research aimed at evaluating new dental, oral, and craniofacial technologies, including coordinating research efforts, ensuring the successful implementation of research into educational initiatives, and collaborating with academic and industry partners
- Managed resources, tracked progress, and ensured that the program meets its goals of promoting innovation and technology commercialization
- Addressed barriers to new technology adoption, helped to shape policies and programs that support the introduction of cutting-edge technologies into dental practice
- See [article](#)

**Director and Founder, Biodynamics Laboratory  
School of Medicine, University of Connecticut Health Center  
1999 - 2014**

This internationally recognized multi-disciplinary research facility was focused on measuring and modeling human, organ, and/or cell performance, including exposures to various physical stimuli and the subsequent biological responses. This facility also investigated human–device interaction that led to applications on the design and development of tools, various medical devices, robotic assist devices, etc. The laboratory had five diverse faculty with backgrounds in medicine, physics, ergonomics, public health, and engineering, and it had two full-time research assistants and two dedicated administrators. At the time of my departure, the lab had been a critical component in several extramurally funded grant awards totaling more than \$13M. In the Fall of 2013, the Biodynamics Laboratory was home to 14 BME graduate students, 6 Ph.D. and 7 M.S. students, and 1 M.D.S. (Master of Dental Science) student, and I was the major advisor and mentor for each of them. At that time, I had graduated more 45 M.S. students (18 of which produced a thesis), served as an associate advisor to 26 Ph.D. and M.S. thesis students and 3 post-doctoral students, provided 51 formal independent studies for 26 graduate students and 18 undergraduate students, and provided laboratory rotations and internships for 13 graduate students, 37 undergraduate students, 13 international undergraduate and graduate students, and 13 regional high-school students.

- Based completely on soft funding, I grew lab from 1,000 sq. ft. to a facility totaling over 12,000 sq. ft., with the main lab (10,000 sq.ft.) and the acoustics lab (2,000 sq.ft.) housed on the Health Center campus, as well as a satellite lab (2,000 sq.ft.) on the School of Engineering campus from 2010 to 2014
- Responsible for engineering and project leadership with research teams that include biometricians, ergonomists, engineers, physicians, physicists, sociologists, and statisticians
- Self-sufficient, sustainable, extramurally-funded lab that models human performance and human exposure and response using biodynamic modalities, such as opto-electronic motion capture, electromyography, and force, and acceleration measures, to provide a platform for comparing observed biomechanical performance with predicted performance under various conditions of stress and use within laboratory and field environments
- Maintained a 100% placement rate for all graduate students trained within the laboratory
- Developed many advanced software-based systems, using LabVIEW and MatLAB, that integrate measurements assembled from diverse data collection systems for signal processing and data analysis
- Responsible for daily operation of lab including managing and promoting teamwork among research assistants and graduate and undergraduate students
- Developed partnerships with regional hospitals and global industry, including research and service contracts
- Fostered partnerships and collaboration with federal agencies including NIOSH, NASA, and NIH-NIBIB
- Fostered partnerships with international colleagues in Canada, Finland, Germany, Japan, and Sweden

- Hosted several national conferences on ergonomics and human exposures
- Work clinically with occupational disease patients in the Occupational Medicine clinic
- Established post-graduate, graduate, and undergraduate education within the laboratory environment
- Established laboratory community outreach by giving lectures in the Connecticut community college system on medical device manufacturing and careers in engineering and by inviting high school, and middle school, students to participate in a laboratory internship that is several weeks in length (typically over the summer)

**Biomedical Engineering Coordinator, Ergonomics Technology Center  
Division of Occupational and Environ. Medicine, School of Medicine  
University of Connecticut Health Center  
1996 - 1999**

As a Ph.D. Graduate Research Assistant, conceptualized, initiated, and developed a medical-school-based research laboratory in biomechanics and biodynamics. Through many research efforts and through the support of my many graduate students, this laboratory became largely successful and evolved into the Biodynamics Laboratory ([please see above](#)).

- Developed and implemented a strategic plan and a business plan that guided budget allocations for long-term laboratory development and sustainability
- Developed methodologies to collect human biomechanics and human performance data from diseased and non-diseased populations throughout many diverse environments and scenarios
- Structured and conducted human performance research under several grants with the Division of Occupational and Environmental Medicine in the School of Medicine
- Responsible for equipment purchases and lab budget

## **OTHER RELEVANT LEADERSHIP POSITION EXPERIENCE**

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**Director of Standards, Acoustical Society of America (ASA), Melville, NY  
([asastandards.org](http://asastandards.org))**

**2025 -**

- Serve as an ex-officio member of the Executive Council for the Acoustical Society of America (ASA)
- Oversee the technical Standards Program, including 80+ working groups and 700+ volunteers
- Promote and champion the Standards Program to increase visibility and participation internally and externally
- Identify new applications and/or venues for standards that will further the goals of the ASA
- Develop and implement a plan to engage volunteer leadership to review standards and engage working groups to provide a consistent framework for the development of national standards
- Develop relationships and expand outreach and member engagement working with a membership recruitment committee to continually develop potential member recruitment
- Review the annual ASA Standards membership dues structure, balancing the value to both ASA and Standards member organizations
- Develop new opportunities to increase revenues, including sponsorships, licensing, partnerships, and opportunities to submit grant proposals to secure funding for Standards programs and initiatives
- Serve as Chair of the ASA Committee on Standards (ASACOS) and ASACOS Steering Committees, including planning and conducting bi-annual meetings and facilitate communications between ASACOS and Technical Committees (TCs) to collaborate on application of standards in research efforts
- Sponsor or co-sponsor relevant special sessions at ASA meetings
- Promote volunteer growth and engagement by identifying, mentoring, and grooming new leaders in the Standards program (e.g., Working Group chairs; TAG chairs; S-committee chairs and vice chairs)

**Chair, ANSI TAG to ISO TC / 108 on *Mechanical Vibration, Shock, and Condition Monitoring***  
**American National Standards Institute (ANSI) and Acoustical Society of America (ASA), Melville NY**  
[\(asastandards.org/iso-tc-tag-108/\)](http://asastandards.org/iso-tc-tag-108/)  
**2022 -**

The purpose of ANSI Technical Advisory Group (TAG) to ISO TC/108 is to develop and maintain US consensus positions and activities in the fields of mechanical vibration and shock and the effects of vibration and shock on humans, machines, vehicles (air, sea, land and rail) and stationary structures, and of the condition monitoring of machines and structures, using multidisciplinary approaches. This includes terminology and nomenclature; excitation by sources, such as machines and vibration and shock testing devices; elimination, reduction, and control of vibration and shock, especially by balancing, isolation and damping; measurement and evaluation of human exposure to vibration and shock; methods and means of measurement and calibration; methods of testing; and methods of measurement, handling, and processing of the data required to perform condition monitoring and diagnostics of machines.

- Plan national priorities and goals in line with ANSI and ASA S-Committees
- Oversee the development, transmission, and maintenance, via ANSI, of US consensus positions and comments on activities and ballots of TC/108, where activities and ballots include the approval, reaffirmation, revision, and withdrawal of ISO standards
- Oversee conformity assessment activities and submissions of New Work Item Proposals (NWIPs) for consideration and for ISO member voting regarding the development of new standards
- Ensure compliance with TAG procedures and with ISO policies and procedures
- Recommend experts to serve in TC/108 and identify delegates and experts to represent the US at international ISO meetings
- Work with a wide array of stakeholders and leaders from industry, government, private companies, educational institutions, consumer groups, and other organizations on solutions to emerging issues and obstacles that impact industry, product lines, or other areas of US interests
- Work closely with the teams developing standards and understand how US organizations are applying standards in business models
- Serve as the point of contact for US TAG members, manage questions and concerns about issues impacting industry, negotiate and communicate with stakeholders, and find common ground and promote a collegial environment and consensus between diverse and sometimes conflicting viewpoints

**Chair, ANSI S2 WG39 and S3 WG39 on *Human Exposure to Mechanical Vibration and Shock***  
**American National Standards Institute (ANSI) and Acoustical Society of America (ASA), Melville, NY**  
[\(asastandards.org/working-groups-portal/s2-wg39/\)](http://asastandards.org/working-groups-portal/s2-wg39/), [\(asastandards.org/working-groups-portal/ansi-s3wg39/\)](http://asastandards.org/working-groups-portal/ansi-s3wg39/)  
**2021 -**

The purpose of the ANSI Work Group (WG) 39 under Committees S2 and S3 is to develop and maintain standards for shock and vibration and biodynamic environments with regard to criteria for health, safety, performance, and comfort. This also includes guidelines regarding the effects of occupational and non-occupational exposures on the human population with environments of primary interest including vibration, rotational oscillations, shock and impact transmitted to the whole-body or parts thereof. Guidelines also include terminology, characterization of biodynamic properties of humans with and without support and restraints, biodynamic models or analogs, and descriptions of physical, behavioral and physiological effects of mechanical environments. This WG also maintains communications and liaisons with other related ANSI WGs, relevant US regulatory agencies, and relevant ISO standards groups.

- Recommend individuals who will serve on the S2 and S3 subcommittees each calendar year
- Plan subcommittee goals and activities in line with the charge approved by the Board of Directors for the ANSI / ASA S-Committees
- Plan and oversee virtual and face-to-face meetings of the committee
- Participate in the meetings of the committee councils for S2 and S3 and provide summaries of activities during the past year, plans for the coming year, as well as any concerns or problems
- Solicit proposals from members for meetings and meeting topics, encourage participation of all members

- Provide orientation for incoming members by explaining the work involved and by inviting them to attend meetings prior to the start of their terms

**Chair (*inaugural*), Committee F48 on Exoskeletons and Exosuits  
ASTM International, West Conshohocken, PA**

([www.astm.org/COMMITTEE/F48.html](http://www.astm.org/COMMITTEE/F48.html))

**2017 - 2023**

The purpose of ASTM Committee F48 is to develop and establish international consensus standards to address safety, quality, performance, ergonomics, and terminology for exoskeleton and exosuit systems and their components during the full life cycle of the product – from before usage, to maintenance, to disposal – including, security and information technology considerations. The activities of F48 cover military, industrial, emergency response, medical, and consumer applications and cover passive and active systems, enhancing and decreasing effects systems, as well as systems with physical and cognitive integration.

- Uphold the consensus process per ASTM regulations and Committee Bylaws, as well as general parliamentary procedures
- Chair meetings of both the executive subcommittee and the main committee
- Oversee the standards development activities of the committee, including five-year review, due process for negative voters, and actions on standards
- Appoint and mentor subcommittee chairpersons, liaisons, and executive subcommittee task groups, such as the nominating committee and strategic planning committee
- Ensuring that the executive subcommittee performs all required duties, such as approving membership applications and affiliate members, classifying members of classified committees, assigning voting status, and any duties outlined in the committee bylaws
- Manage ASTM circular letter ballots and other headquarter correspondence
- Manage general administrative duties, such as planning future meetings, managing committee funds, and approving proposals for symposia
- Provide guidance as needed to officers and committee members
- Conduct regular executive committee meetings, including preparation of the agenda, review of correspondence, review of minutes and action items from previous meetings, communicate with ASTM staff manager
- Work with executive committee and ASTM staff manager to maintain committee's profile in industry (for example: committee promotions, industry strategic partnerships, opportunities for committee representatives at industry events, student posters sessions, etc.)

**Campus Director for TAMU-T, NASA Texas Space Grant Consortium  
Texas A&M University - Texarkana**

**2014 - 2017**

Applied for, and established, TAMU-T as a member in the Texas Space Grant Consortium. As Campus Director, my role and responsibilities were essentially equivalent to that of my space grant directorships for UCONN and UCONN Health Center (as detailed in those sections below). I was successful in bringing the Office of Education at Johnson Space Center to Texarkana to engage NASA with the local K-12 STEM education system, which led to Texarkana becoming a NASA education partner/site and to our K-12 involvement on the NASA advisory board for STEM education.

- Represented TAMU-T on the TSGC Academic Advisory Board
- Disseminated NASA Space Grant funding opportunities to faculty and students and to educators and the general public in the great Texarkana region
- Advertised research and scholarship opportunities and encourage students and faculty members on their campuses, including the recruitment of members from underrepresented groups, to apply for grants and scholarships

**Interim Program Coordinator, School of Engineering Technologies  
Springfield Technical Community College (STCC), Springfield, MA  
2013**

Interim leadership role on a state-funded planning grant from the Massachusetts Life Sciences Center to develop Biomedical Engineering Technology degree curriculum and determine equipment and infrastructure needs to deliver a life sciences education leading to employment in the field.

- Served as the initial project coordinator to begin the planning, organization, and institutional strategizing of a new Biomedical Engineering Technology degree in the School of Engineering Technologies
- Performed a Skills Gap Analysis and Developing a Curriculum (DACUM) analysis with STCC faculty and regional industry partners to determine tasks, knowledge, skills, and equipment needed for graduates to be successful in identified career pathways
- Worked with project consultants and overseeing project logistics, including a S.W.O.T. analysis centered on a multi-disciplinary and innovative curriculum involving regional and national industrial need
- See [article](#)

**Chair, Industry Affairs Committee (IAC)  
Biomedical Engineering Society (BMES), Landover, MD  
2012 - 2014**

Nominated and elected as chair for a new industry affairs committee in the international flagship society for Biomedical Engineering. This position sought to expand translational efforts within BMES.

- Increased IAC membership with industry partners to represent a national cross-sectional perspective, including participation from various sectors of Biomedical (BM) industry, including medical devices, biotech, pharma, etc., as well as from clinical and legal practitioners
- Structured and conducted regional industry-based symposiums and/or forums around the United States
- Increased industry participation in the annual meeting of the BMES, including an increase in industrial/clinical/legal participation in the Translational BME track, an increase career fair participation, and an increase in industry presence in the exhibit hall
- Provided the vision and structure of the current IAC, as well as for the industry-specific activities that continue to successfully take place in the annual BMES meetings

**Campus Director for UCONN, NASA Connecticut Space Grant Consortium  
All Schools and Programs, University of Connecticut  
2009 - 2011**

Served as the Campus Director for the main campus of the University of Connecticut in Storrs, CT, for three years and jointly represented UCONN and UCONN Health Center (serving for UCONN Health Center since 2002; both are individual Consortium members), as well as serving on the CT Space Grant Consortium (CTSGC) Academic Advisory Board. This position involved 5% of my time (10% total), which was uncompensated for but justified as cost-share.

- Disseminated NASA resources and Space Grant funding opportunities to faculty and students and to educators and the general public in CT
- Advertised research and scholarship opportunities and encourage students and faculty members on their campuses, including the recruitment of members from underrepresented groups, to apply for grants and scholarships
- Participated in the review process for faculty and student awards funded by CTSGC
- Managed campus funds designated for use by the CTSGC for UCONN Health Center to support faculty and student opportunities, public lectures, outreach events, etc.
- Organized campus-wide NASA Space Grant outreach events to expose entire student body to NASA, Space Grant, and related opportunities, including a CT Space Grant Academic Year Kick-Off and a commemorative Apollo 13 event involving engineers from Hamilton Standard that were instrumental in saving the astronauts' lives. Assisted undergraduate students to organize a NASA Space Science Day,

where middle school teachers were trained on how to incorporate space science, including the use of borrowed lunar samples, within their curriculum and instruction. Following teacher training, several middle school students participated in undergraduate student- and teacher-led space science activities.

### **Director, Bioengineering Center**

**Schools of Medicine, Dental Medicine, and Biomedical Sciences**

**University of Connecticut Health Center**

<https://web.archive.org/web/20090308001619/http://resadm.uhc.edu/hcrac/bioengineering.html>

**2006 - 2010**

The Bioengineering Center offered engineering and research support to the broad biomedical research community at the UConn Health Center in the Schools of Medicine, Dental Medicine, and Biomedical Sciences. It was widely regarded as an in-house engineering and research consultation organization capable of providing a wide range of biomedical, electrical, and mechanical engineering support services including prototype device conceptualization and construction, research equipment recommendation and selection, and research planning and participation. The Center also assisted with identifying faculty partnerships and graduate student candidates to participate on research projects and provided oversight on engineering student projects. The Bioengineering Center was structured as a fee-for-service center (\$90 per hour labor plus material costs).

- Provided engineering and research support, including design of experiments, and research equipment design, development, and repair to the academic biomedical research and clinical communities
- Responsible for daily departmental operations
- Developed and oversaw annual departmental budget, including working with IDCs under grant awards
- Guided marketing and marketing strategies and new activities of the center
- Managed the support staff of one full-time technician and one part-time administrator, as well as graduate students

### **Campus Director for UCONN Health Center, NASA Connecticut Space Grant Consortium**

**Schools of Medicine, Dental Medicine, and Biomed. Sciences, University of Connecticut Health Center**

**2002 - 2014**

Applied for, and established, the UCONN Health Center as a member in the Connecticut Space Grant Consortium. Served as the Campus Director for the Health Center campus of the University of Connecticut in Farmington, CT. Note that my role and responsibilities were equivalent to that of the directorship as previously outlined for UCONN ([please see above](#)).

- Represented UCONN Health Center on the CT Space Grant Consortium Academic Advisory Board

## **INDUSTRY EXPERIENCE**

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1994-1996	Assistant to the Editor, Modeling in Physiology, American Journal of Physiology, The American Physiological Society, Dr. Mary Anne Farrell Epstein, Editor
1994-1995	Biomedical Engineer, Bioengineering Facility, University of Connecticut Health Center, Farmington, CT
1993-1994	Instrumentation and Controls Engineer, The Dexter Corp., Non-Wovens Division, Windsor Locks, CT
1992	Aerospace Manufacturing Engineer, Dynamic Metal Products Co., Inc., Manchester, CT
1991-1992	Engineering Intern, The Dexter Corp., Non-Wovens Division, Windsor Locks, CT
1991	Corrosion Protection Engineer, Yankee Gas, A Northeast Utilities Company, Meriden, CT
1990	Field Operations Engineer, Yankee Gas, A Northeast Utilities Company, Meriden, CT
1989-1990	Electrical Engineering Apprentice, Control Module, Inc., Enfield, CT

## HONORS AND AWARDS

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2024	Phi Beta Delta (Honor Society for International Scholars), Zeta Gamma Chapter
2016	Fellow, American Institute of Medical and Biological Engineering (AIMBE), Washington D.C.
2015	Alice Hamilton Award of Excellence in Occupational Safety and Health, Engineering Controls Category, National Institute for Occupational Safety and Health (NIOSH), "For Leadership through Science by Publishing"
2004-2005	Nomination, Academic Advisor of the Year, UCONN
1996-1999	Ph.D. Graduate Assistant Award, Ergonomic Technology Center of CT, UCONN Health Center
1994-1995	M.S. Graduate Assistant Award, Bioengineering Facility, UCONN Health Center
1990-1991	NASA Society Impact Project Award, "Applications and Implementations of Lunar Base Waste Management Technology on Earth", WPI

## MEMBERSHIP IN NATIONAL AND INTERNATIONAL SCIENTIFIC SOCIETIES

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2024 -	Phi Beta Delta Honor Society for International Scholars
2017 -	Acoustical Society of America (ASA)
2017 -	ASTM International
2016 -	American Institute of Medical and Biological Engineering (AIMBE)
2015 -	American Society of Engineering Education (ASEE)
2010-2014	Alpha Eta Mu Beta (AEMB), Biomedical Engineering Honor Society, Faculty Advisor
2008-2017	Society for Biological Engineering (SBE)
2001 -	Biomedical Engineering Society (BMES)
1998 -	Human Factors and Ergonomics Society (HFES)

## STUDENT GROUP ADVISING AND MENTORSHIP

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2022 -	Engineering World Health Chapter, NIU
2018 -	Biomedical Engineering Society (BMES) Student Chapter, NIU
2015-2017	Engineering World Health Chapter, TAMU-T
2013-2014	Engineering World Health Chapter, UCONN
2010-2014	Alpha Eta Mu Beta (AEMB), Biomedical Engineering Honor Society, UCONN
2010-2014	Biomedical Engineering Society (BMES) Student Chapter, UCONN
2008-2014	BME Graduate Student Committee, UCONN

## EDITORIAL ACTIVITIES – JOURNALS AND PUBLICATIONS

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2024 -	Associate Editor, <i>Research in Biomedical Engineering and Technology</i> , Taylor and Francis
2018-2019	Editor-in-Chief, <i>Bioengineered</i> , Taylor and Francis
2015 -	Editor-in-Chief, <i>Biomedical Engineering Handbook</i> , (2026, 6 Volumes targeted), CRC Press, FL
2015 -	Editorial Board Member, <i>Regenerative Engineering and Translational Medicine</i> , Springer
2014 -	Editor-in-Chief, Biomedical Engineering Textbook Series, CRC Press, FL
2014-2015	co-Editor-in-Chief, <i>Biomedical Engineering Handbook</i> (2015, 4 Volumes; 5,430 pp.), CRC Press, FL

## REVIEW ACTIVITIES – JOURNALS AND PUBLICATIONS

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American Journal of Industrial Medicine, Applied Ergonomics, Bioengineered, Ergonomics, Industrial Health, IEEE Transactions on Biomedical Engineering, International Journal of Environmental Research and Public Health, Journal of Biomechanics, Journal of Sound and Vibration, Journal of the Acoustical Society of America, Measurement, Sensors, Journal of Toxicology and Environmental Health, Vibration, Journal of Engineering in Medicine, Journal of Applied Physiology

## REVIEW ACTIVITIES – FUNDING AGENCIES

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National Aeronautics and Space Administration, National Institute for Health, National Institute for Occupational Safety and Health, National Science Foundation

## NATIONAL AND INTERNATIONAL COMMITTEES AND ACTIVITIES

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- 2024 - Member-at-Large, ASTM Committee F48 on *Exoskeletons and Exosuits*, ASTM International, West Conshohocken, PA
- 2023 Co-Chair, ErgoX Symposium, Exoskeleton Track, Human Factors and Ergonomics Society (HFES), Washington, DC
- 2023 - Member, r2p Incubator Advisory Board, Northeast Center for Occupational Health and Safety, Cooperstown, NY
- 2023 - Member, International Advisory Committee on Hand-Arm Vibration
- 2022 Co-Chair, ErgoX Symposium, Exoskeleton Track, Human Factors and Ergonomics Society (HFES), Atlanta, GA
- 2022- Chair, ANSI TAG for ISO / TC 108 on *Mechanical Vibration, Shock, and Condition Monitoring*, ANSI and Acoustical Society of America (ASA), NYC and Melville, NY
- 2022 Session Chair and Organizer, WearRAcon 2022, “Risk Management”, Scottsdale, AZ
- 2021 Co-Chair, ErgoX Symposium, Exoskeleton Track, Human Factors and Ergonomics Society (HFES)
- 2021 - Chair, ANSI S2 WG39 and S3 WG39 on *Human Exposure to Mechanical Vibration and Shock*, ASA, Melville, NY
- 2021 Session Chair and Organizer, WearRAcon 2021, Risk Management Forum: What is Risk Management and How Does One Consider This?”
- 2020 Co-Chair, ErgoX Symposium, Exoskeleton Track, HFES
- 2019 Co-Chair, ErgoX Symposium, Exoskeleton Track, HFES, Seattle, WA
- 2019 Session Co-Chair and Organizer, “Graduate Student Training and Alternate Career Pathways”, American Society of Engineering Education (ASEE) Engineering Deans Institute (EDI), San Antonio, TX
- 2019-2023 Representative Member, Board of Directors, Illinois Manufacturing Excellence Center (IMEC), Peoria, IL ([www.imec.org](http://www.imec.org))
- 2017-2023 Chair, Committee F48 on *Exoskeletons and Exosuits*, ASTM Intl., West Conshohocken, PA
- 2017 - US Delegate, Intl. Standards Organization Technical Committee (ISO/TC) on *Human Exposure to Mechanical Vibration and Shock*, 108/SC 4, Geneva, Switzerland
- 2017-2022 Member, Board of Directors, Northern Illinois Research Foundation, NIU, DeKalb, IL
- 2017 - Committee Member, ANSI S2 WG 39 and S3 WG39 on *Human Exposure to Mechanical Vibration and Shock*, Acoustical Society of America (ASA), Melville, NY
- 2017 - US Delegate, Intl. Standards Org. Tec. Committee (ISO/TC) on *Human Exposure to Mechanical Vibration and Shock*, 108/SC 4, Geneva, Switzerland (*current US Lead for Hand-Arm Vibration*)
- 2015-2017 Chair, Healthcare Research Group, TEES Annual Research Conference, College Station, TX
- 2014 - Member, Engineering Technology Council, American Society of Engineering Education (ASEE), Washington, DC
- 2014-2017 Member, Council of Texas Engineering Deans
- 2013 Invited Moderator, “BME Jobs in Industry”, Biomedical Engineering Society (BMES) 2013 Annual Meeting, Seattle, WA
- 2012-2014 Chair, Industry Affairs Committee, Biomedical Engineering Society
- 2012 Chair, Translational Biomedical Engineering, BMES 2012 Annual Meeting, Hartford, CT
- 2012 Conference Chair, 4<sup>th</sup> American Conference on Human Vibration, Hartford, CT
- 2011-2014 Member, National Meetings Committee, Biomedical Engineering Society
- 2011 Vice-Chair, BMES 2011 Annual Meeting, Hartford, CT
- 2011 Chair, Translational Biomedical Engineering, BMES 2011 Annual Meeting, Hartford, CT
- 2011 - Member, Scientific Advisory Committee, American Conference on Human Vibration
- 2010-2014 Judge, Regional Chairman’s Award, F.I.R.S.T. Regional Robotics Competition, Hartford, CT
- 2010-2014 Member, National Council of Chairs for Biomedical Engineering

2009	Invited Judge, F.I.R.S.T. Regional Robotics Competition, Hartford, CT
2008	Symposium Facilitator, Host, and Chair, 2008 Lucien Brouha Work Physiology Symposium: "Knowledge at Work", Farmington, CT
2008	Session Chair/Facilitator, "Advances in Orthopedic Implants and Prosthetic Devices", MEDi 2008, Hartford, CT
2008	Session Chair/Facilitator, "Medical Product Development - Innovation, Solutions, Realization", EASTEC: Advanced Productivity Exposition, Society of Manufacturing Engineers (SME), West Springfield, MA
2008	Invited Judge, F.I.R.S.T. Regional Robotics Competition, Hartford, CT
2007	Session Chair/Facilitator, "Prototype Design: Testing and Clinical Trials of Medical Devices", EASTEC: Advanced Productivity Exposition, Society of Manufacturing Engineers (SME), West Springfield, MA
2007	Session Chair/Facilitator, "Advances in Prosthetic Devices", PharmaMedDevice Conference, New York, NY
2005-2009	Science Advisor, Biomedical Engineering Alliance and Consortium (BEACON), Hartford, CT
2004	Session Chair, Biomechanics, 30 <sup>th</sup> Northeast Biomedical Engineering Conference, Western New England University, Springfield, MA
2004	Session Chair, Rehabilitation Engineering, 30 <sup>th</sup> Northeast Biomedical Engineering Conference, Western New England University, Springfield, MA
2001	Session Chair, Human Dynamics, 27 <sup>th</sup> Northeast Biomedical Engineering Conference, UCONN, Storrs, CT
2000	Symposium Director and Chair, 3 <sup>rd</sup> Annual BEACON Symposium, "Ergonomics and Biodynamics", UCONN Health Center, Farmington, CT
1999	Session Chair, Human Mobility, 25 <sup>th</sup> Northeast Biomedical Engineering Conference, University of Hartford, Hartford, CT
1997-2001	Member, Steering Committee, Biomedical Engineering Alliance for Connecticut, Hartford, CT

## **ACADEMIC BOARD MEMBERSHIPS AND ACTIVITIES**

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2018	Advisory Board, Midwestern University Chicago College of Osteopathic Medicine, Downers Grove, IL
2007-2012	Board of Directors, Tagliatela School of Engineering, University of New Haven, New Haven, CT
2003 -	Advisory Board, Department of Biomedical Engineering, Western New England University, Springfield, MA
2003 -	Biomedical Engineering Advisory Board, Department of Civil, Environmental, and Biomedical Engineering, University of Hartford, West Hartford, CT

## **ADDITIONAL UNIVERSITY SERVICE**

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2018-2019	Search Committee for Provost and Executive Vice President, NIU
2014-2015	Search Committee for Dean of the College of Business, TAMU-T
2013-2014	Search Committee for BME Co-Department Head, Schools of Medicine and Dental Medicine, UCONN Health Center
2010-2014	BME Faculty Representative, Courses and Curriculum Committee, School of Eng., UCONN
2006-2012	Search Committees for BME and ME Faculty, School of Eng., UCONN
2008-2011	Associate Core Director, Connecticut Institute for Clinical and Translational Science (CICATS), NIH Clinical and Translational Science Award (CTSA) Planning Committee, UCONN Health Center
2003-2014	Interviewer and Application Reviewer, Medical School Applicants, School of Medicine, UCONN Health Center
1999-2014	Interviewer and Application Reviewer, Occupational Medicine Residency Program, UCONN Health Center
1996-2014	Steering Committee, Ergonomic Technology Center of Connecticut, UCONN Health Center

## CONSULTING

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Covidien, Medtronic, DentalEZ Group, Dentsply International, MEDideas, Stanley Toolworks Inc., Milwaukee Tools, MCErgo, General Dynamics, NASA, National Institute for Occupational Safety and Health (NIOSH), Japan National Institute for Occupational Safety and Health (JNIOSH), Connecticut Children's Medical Center, St. Francis Hospital and Medical Center, Hartford Hospital, Asnuntuck Community College, Springfield Technical Community College, various K-12 educational institutions (on engineering education), Ciracet, Aetna Insurance, Travelers Insurance, IDEAL Industries, Delta Mobile Systems, Navatek, Corsair Innovations, various law firms (for forensics, accident reconstruction, product evaluation, etc.)

## SELECTED INVITED PRESENTATIONS

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- 2023 Seminar, "Vibration Transmissibility Studies on Gloves and on Exoskeletons and the Potential Influence on Standards Development", Health Effects Laboratory Division (HELD), National Institute for Occupational Safety and Health (NIOSH), May 15
- 2022 Speaker, "Standards for Industrial Exoskeletons and Exosuits", Annual Conference of the Center of Research Expertise for the Prevention of Musculoskeletal Disorders (CRE-MSD 2022) at the University of Waterloo, Mississauga, Ontario, Canada, October 3
- 2021 Seminar, "Exoskeleton Technologies", Materials Handling Institute (MHI), Ergonomic Assist Systems and Equipment (EASE) special interest group, May 21
- 2021 Workshop, "Human Exposure to Occupational Vibration", American Society of Safety Professionals (ASSP), April 27
- 2021 Workshop, "Exoskeleton Technologies – Application, Integration, and Standards", American Society of Safety Professionals (ASSP), March 25
- 2020 Panelist, "When to use Exoskeletons as PPE", ASTM International, November 19
- 2020 Workshop, "Human Exposure to Occupational Vibration", 93<sup>rd</sup> Annual Maine Safety and Health Conference, September 24
- 2020 Workshop, "Exoskeleton Technologies – Application, Integration, and Standards", 93<sup>rd</sup> Annual Maine Safety and Health Conference, September 24
- 2020 Keynote, "Exoskeletons – Technologies, Assessment, and Standards", 2020 Annual Meeting of the International Society of Occupational and Environmental Safety, September 17
- 2020 Panelist, "Exoskeleton Technologies – Giving Workforce Longevity", General Aviation Manufacturers Association (GAMA) Innovation Webinar Series, July 31
- 2019 Webinar Presentation, "Exoskeleton Standards", American Association of State Compensation Insurance Funds (AASCIF) Safety and Technology Committee Meeting, July 19
- 2019 Panelist, "Insurance Forum: Risk and Insurance Impacts of Using Wearable Robotics", WearRA Con, Wearable Robotics Association, March 28, Scottsdale, AZ
- 2019 Panelist, "Insurance Forum: Understanding Products Liability Insurance Issues", WearRA Con, Wearable Robotics Association, March 28, Scottsdale, AZ
- 2019 Keynote, "Exoskeletons - Meet the Standard", Applied Ergonomics Conference (AEC), March 26, New Orleans, LA
- 2019 Keynote, "ASTM International Committee F48 – Exoskeletons and Exosuits – Current Activity", Society of Casualty Safety Engineers, Chicago, IL
- 2018 Speaker, ErgoX Symposium, HFES, "Exoskeletons in the Workplace - Assessing Safety, Usability, & Productivity", October 1, Philadelphia, PA
- 2017 Presentation, "Review of Research, Future Directions, and NIOSH Collaboration", Health Effects Laboratory Division (HELD), National Institute for Occupational Safety and Health (NIOSH), January 25, Morgantown, WV
- 2016 Speaker, Million Women Mentors (MWM) Arkansas Kickoff Event, Arkansas High School, December 12, Texarkana, AR
- 2016 Panelist, "Cosmic Conversations: Science Fact vs. Science Fiction", Texarkana Regional Humanities and Arts Council (TRAHC), April 8, Texarkana, TX
- 2015 Speaker, "Stimulating Innovation in STEM", Texas A&M University System Engineering Academic Partners and TEES Regional Division Heads Meeting, May 19, Weslaco, TX

- 2014 Teacher Workshop Instructor, “How to Incorporate Engineering Education in the pre-K through 2<sup>nd</sup> Grade Curriculums”, CREC Academy of Aerospace and Engineering Elementary School, Rocky Hill, CT
- 2013 Moderator, Panel on “BME Jobs in Industry”, BMES 2013 Annual Meeting, Seattle, WA
- 2013 Webinar Moderator, “Developing an Industry Career in Biomedical Engineering”, April 17, Biomedical Engineering Society, Landover, MD
- 2013 Keynote Speaker, “Biomedical Engineering – Understanding Career Options”, 2013 Bay Area Career Mixer, March 26, San Jose State University, San Jose, CA
- 2012 Keynote Speaker, “Simultaneous Measurement of Hand-Arm Vibration and Grip Force in Various Field Settings”, 20<sup>th</sup> Japan Conf on Human Resp to Vibration, Sept. 4, Osaka, Japan
- 2012 Speaker, “Careers in Medicine and Biomedical Engineering”, Career Explorations Symposium, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2012 Teacher Workshop Creator and Instructor, “BME Education can be Universally Applied”, CREC Medical Professions and Teacher Preparation Academy (MPTPA), Windsor, CT
- 2011 Speaker, “Careers in Medicine and Biomedical Engineering”, Career Explorations Symposium, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2010 Speaker, “Biomedical Engineering in STEM Education”, CREC Medical Professions and Teacher Preparation Academy (MPTPA), Windsor, CT
- 2010 Speaker, “Careers in Medicine and Biomedical Engineering”, Career Explorations Symposium, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2009 Speaker, 17<sup>th</sup> Japan Conference on Human Response to Vibration, Tokyo, Japan
- 2009 Speaker, Puerto Rico Health Care Council, “Academic and Industrial Collaborations with the University of Connecticut Schools of Medicine, Dental Medicine, and Engineering and with BEACON”, San Juan, PR
- 2009 Speaker, Career Explorations Symposium, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2008 Presentation, 9<sup>th</sup> and 10<sup>th</sup> Grades, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2008 Speaker, “Modeling the Mechanics of Human Performance, Exposure and Response”, Mechanical Engineering Seminar Series, UCONN
- 2007 Speaker, Career Explorations Symposium, CREC Greater Hartford Academy of Math and Science (GHAMAS), Hartford, CT
- 2002 Speaker, “The Biodynamics Laboratory at the University of Connecticut Health Center”, Biomedical Engineering Seminar Series, UCONN
- 2001 Lecture, “Biodynamics and Human Exposure and Response”, Musculoskeletal Disability Services, Aetna Insurance, Hartford, CT
- 2000 Keynote Address, Graduation Ceremony of the Connecticut Math and Sciences Academy, “Biomedical Engineering Applications in the Space Program: EVA Suit and Tool Activities”, Hartford, CT
- 2000 Lecture, “Biodynamics Research in the Space Program”, Connecticut Math and Sciences Academy, Hartford, CT
- 2000 Lecture, “Biodynamics: Research and Applications”, Connecticut Math and Sciences Academy, Hartford, CT
- 2000 Speaker, Seminar Series in Engineering, “A Method to Biodynamically Model Hand Tool Use”, WPI, Worcester, MA
- 1999 Speaker, Department of Engineering Seminars, “A Method for the Comprehensive Biodynamic Evaluation of Manual Hammers”, Western New England University, Springfield, MA
- 1998 Lecture, Post-Medical Graduate Education Courses (CME credited), “Ergonomics and Biomechanics” and “Ergonomics, Work Organization, and Biomechanical Modeling: Upper Extremity Disorders”, American College of Occupational and Environmental Medicine (ACOEM), Hynes Convention Center, Boston, MA
- 1995 Speaker, Seminar on Mechanical Engineering and Manufacturing, “Exposing Cultured Cell Monolayers to Controlled Shear Stress Conditions”, WPI, Worcester, MA
- 1992 Presentation, UMASS Medical Center and WPI Joint Research Projects

Symposium, “Arterial Stenosis Models”, School of Medicine, UMASS Medical Center, Worcester, MA

## PEER-REVIEWED PUBLICATIONS

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1. Wu JZ, Zheng L, Moore KD, Xia T, **Peterson DR**, “A biomechanics-based conceptual design of spring knee-aids to reduce joint loading during high knee-flexion tasks”, J Eng Med, 2024 (*submitted, in review*)
2. Takai S, **Peterson DR**, Barker G, DeBartolo EA, Guthula M, “A three-year study of relationships between team characteristics and team performance”, Education Sci, 2024 (*submitted, in review*)
3. Xia, T, Ziarati PT, Kudernatsch S, **Peterson DR**, “The effects of arm-supporting exoskeletons on propagation of hand-transmitted vibration along the arm and the trunk during simulated overhead tasks”, Vibration, 2024 (*submitted, in revision*)
4. Xia T, Ziarati PT, Kudernatsch S, **Peterson DR**, “The effects of exoskeleton use on human response to simulated overhead tasks with vibration”, Ergonomics, Jul 2024;1-14 (*currently available online*)
5. Xia T, Ziarati PT, Kudernatsch S, **Peterson DR**, “Experimental assessment of effectiveness of arm-supporting exoskeleton for overhead work”, 7<sup>th</sup> Intl Digital Hum Mod Symp (DHM 2022), Iowa City, IA, 2022 (*full paper*)
6. Lowe BD, Billotte WG, **Peterson DR**, “ASTM F48 formation and standards for industrial exoskeletons and exosuits”, IISE Trans Occ Ergo and Hum Fac, 2019;0:1-7
7. Upadhyay M, Shah R, Agarwal S, Vishwanath M, Chen P, Asaki T, **Peterson DR**, “Force system with vertical V-bends: A 3D in vitro assessment of elastic and rigid rectangular archwires”, J Vis Exp, 2018; (137)
8. DeLeon-Nwaha T, **Peterson DR**, “A Kinematic approach to understanding performance in upper-extremity function during a goal-directed man-machine interface task in a submariner environment”, Critical Reviews in Biomedical Engineering, 2016; 44(4): 255-268
9. **Peterson DR**, Kudernatsch S, Asaki T, “Human-centered exoskeleton: Upper extremity strength augmentation in occupational settings”, Proc Waste Management Symposia, Phoenix, AZ, 2017 (*invited full paper*)
10. Kavanagh KR, Tsui Y, Cote V, Valdez T, Kudernatsch S, **Peterson DR**, “Pediatric laryngeal simulator using 3D printed models: A novel technique”, Laryngoscope, 2017; 127(4):E132-E137
11. Upadhyay M, Shah R, **Peterson DR**, Asaki T, Sumit Y, Agarwal S, “Force system generated by elastic archwires with vertical V bends: a three-dimensional analysis”, Eur J Orthod. 2017; 39(2):202-208
12. Vainstein F, **Peterson DR**, Kolosov D, “Using Multiple Scanning Devices for 3-D Modeling”, in Intelligent Systems for Computer Modelling, Stýskala V, Kolosov D, Snášel V, Karakeyev T, Abraham A, Editors, Springer, 2016:35-41
13. Valdez TA, Spegazzini N, Pandey R, Longo K, Grindle C, **Peterson DR**, Barman I, “Multi-color reflectance imaging of middle ear pathology in vivo”, Anal Bioanal Chem, 2015;407(12):3277-83
14. Dong RG, Welcome DE, **Peterson DR**, Xu XS, McDowell TW, Warren C, Asaki T, Kudernatsch S, Brammer AJ, “Tool-specific performance of vibration-reducing gloves for attenuating palm-transmitted vibrations in three orthogonal directions”, Intl J Ind Ergon, 2014;44(6):827-839
15. Pesce RE, Uribe F, Janakiraman N, Neace WP, **Peterson DR**, Nanda R, “Evaluation of rotational control and forces generated during first-order archwire deflections: A comparison of self-ligating and conventional brackets”, Eur J Orthod. 2014; 36(3):245-54
16. Brammer AJ, Yu G, Bernstein ER, Cherniack MG, Tufts J, **Peterson DR**, “Understanding speech when wearing communication headsets and hearing protectors with subband processing”, J Acoust Soc Am, 2014;136(2):671-681
17. **Peterson DR**, “Simultaneous measurement of hand-arm vibration and grip force in various field settings”, Proc 20<sup>th</sup> Japan Conf Human Resp Vibration, Osaka, Japan, 2012;1-5 (*invited full paper*)
18. Asaki T, **Peterson DR**, “Design and implementation of a novel accelerometer mount for difficult vibration measurements in the field”, Proc 20<sup>th</sup> Japan Conf Human Resp Vibration, Osaka, Japan, 2012;14-22 (*invited full paper*)
19. **Peterson DR**, Asaki T, Brammer AJ, Cherniack MG, “Novel method for quantifying noise and vibration exposures from dental instruments in a dental hygiene population”, Proc 17<sup>th</sup> Japan Conf Human Resp Vibration, Tokyo, Japan, 2009;70-77 (*invited full paper*)

20. **Peterson DR**, Brammer AJ, Cherniack MG, "Exposure monitoring system for day-long vibration and palm force measurements", *Intl J Ind Ergon* 2008;38(9-10):676-686
21. Cherniack MG, Brammer AJ, Lundstrom R, Morse TF, Neely G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Diva U, Croteau M, Dussetschleger J, "The effect of different warming methods on sensory nerve conduction velocity in shipyard workers occupationally exposed to hand-arm vibration", *Int Arch Occup Env Health* 2008;81(8):1045-1058
22. **Peterson DR**, Brammer AJ, Cherniack MG, "Long-duration vibration and grip force measurements using a custom-built data logger and palm-mounted sensors", *Proc 11<sup>th</sup> Intl Conf on Hand-Arm Vibration*, Bologna, Italy, June 2007, 583-588
23. Cherniack MG, Brammer AJ, Morse, TF, **Peterson DR**, Warren N, Dussetschleger J, "Segmental sensory nerve conduction velocity in vibration exposed cohorts", *Proc 11<sup>th</sup> Intl Conf on Hand-Arm Vibration*, Bologna, Italy, June 2007, 91-98
24. Brammer AJ, Yu G, **Peterson DR**, Bernstein ER, Cherniack MG, "Hearing protection and communication in an age of digital signal processing: Progress and prospects", *Proc 9<sup>th</sup> Intl Congress on Noise as a Pub Health Hazard*, Ledyard, CT, 2008:1-8
25. Cherniack M, Brammer AJ, Lundstrom R, Morse TF, Neely G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Diva U, Dussetschleger J, "Syndromes from segmental vibration and nerve entrapment: Observations on case definitions for carpal tunnel syndrome", *Int Arch Occup Env Health* 2008;81(5):661-669
26. Cherniack MG, Brammer AJ, Lundstrom R, Meyer JD, Morse TF, Neely G, Nilsson T, **Peterson DR**, Toppila E, Warren, N, "The Hand-Arm Vibration International Consortium (HAVIC): Prospective studies on the relationship between power tool exposure and health effects", *J Occup Env Med* 2007;49(3):289-301
27. Brammer AJ, **Peterson DR**, Cherniack MG, Diva UA, "Temporary changes in mechanoreceptor-specific vibrotactile perception to stimuli simulating impact power tools", *Inter-Noise 2006*, Institute of Noise Control Engineering, Iowa State Univ, Ames, IA, 2006:1-7
28. Mehrotra M, Saegusa M, Wadhwa S, Voznesensky O, **Peterson DR**, Pilbeam CC, "Fluid flow induces Rankl expression in primary murine calvarial osteoblasts", *J Cellular Biochem* 2006; 98(5):1271-1283
29. Cherniack MG, Brammer AJ, Lundstrom R, Meyer JD, Morse TF, Neeley G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Atwood-Sanders M, Michalak-Turcotte C, Abbas U, Bruneau H, Croteau M, Fu RW, "Nerve conduction and sensorineural function in dental hygienists using high frequency ultrasound handpieces", *Amer J Indus Med* 2006; 49(5):313-326
30. Brammer AJ, **Peterson DR**, Cherniack MG, Gullapalli S, "Improving the effectiveness of communication headsets with active noise reduction: Influence of control structure", In: *RTO-MP-HFM-123, New Directions for Improving Audio Effectiveness*, North Atlantic Treaty Organization, Neuilly-sur-Seine, France, 2005: p.6-1 - p.6-8
31. Brammer AJ, Crabtree RJ, **Peterson DR**, Cherniack MG, "Active headsets: Influence of control structure on communication signals and noise reduction", *ACTIVE 2004*, Institute of Noise Control Engineering, Iowa State Univ, Ames IA, 2004:1-10
32. Cherniack MG, Morse TF, Brammer AJ, Lundstrom R, Meyer J, Nilsson T, **Peterson DR**, Toppila E, Warren N, Fu RW, Bruneau H, Croteau M, "Vibration exposure and disease in a shipyard: A 13-year revisit", *Am J Indus Med* 2004; 45(6):500-512
33. Cherniack MG, Brammer AJ, Lundstrom R, Meyer J, Morse TF, Neely G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Fu RW, Bruneau H, "Segmental nerve conduction velocity in vibration exposed shipyard workers", *Int Arch Occup Environ Health* 2004; 77(3):159-176
34. Brammer AJ, Crabtree RB, **Peterson DR**, Cherniack MG, "Intelligibility in active communication headsets: Role of error path in active noise reduction and speech reproduction", *ICBEN*, edited by R. de Jong, T. Houtgast, E.A.M. Franssen, W.F. Hofman, 2003:58-64
35. Cherniack MG, Brammer AJ, Meyer J, Morse TF, **Peterson DR**, Warren N, Fu RW, "Skin temperature recovery from cold provocation in workers exposed to vibration: A longitudinal study", *Occup Environ Med* 2003; 60(12):962-968
36. Morse TF, Michalak-Turcotte C, Atwood-Sanders M, Warren N, **Peterson DR**, Bruneau H, Cherniack MG, "A pilot study of hand and arm musculoskeletal disorders in dental hygiene students", *J Dental Ed*, 2003; 77(3):173-179
37. Wadhwa S, Godwin SL, **Peterson DR**, Epstein MAF, Pilbeam CC, "Fluid flow induction of cyclooxygenase-2 gene expression in osteoblasts by fluid flow is dependent on an ERK signaling pathway", *J Bone Miner Res* 2002, 17(2):266-274

38. Morse T, Warren N, Cherniack MG, Fletcher F, **Peterson DR**, “The creation of ergonomic data sheets for hazard communication of work-related musculo-skeletal disorders”, *Appl Occup Environ Hyg* 2001, 16(8):823-831

## PEER-REVIEWED SHORT PUBLICATIONS AND ABSTRACTS

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1. Ziarati PT, Xia T, Kudernatsch S, **Peterson DR**, “Exoskeleton use on shoulder muscle activity in overhead work with vibrations”, *Proc Amer Soc Biomech*, Knoxville, TN, 2023
2. Ziarati PT, Xia T, Kudernatsch S, **Peterson DR**, “Method to study the influence of passive upper-extremity exoskeleton systems and posture on human exposure to tool-induced vibrations”, *Proc Biomed Eng Soc Annual Meeting*, San Antonio, TX, 2022
3. Dickinson K, Asaki T, **Peterson DR**, “Translation from research to practice: Development of anti-vibration glove selection tool”, *Proc Biomed Eng Soc Annual Meeting*, San Antonio, TX, 2022
4. Vondra I, Kudernatsch S, **Peterson DR**, “Creating an accurate aneurysm model using patient-specific imaging for in vitro flow loop studies of endothelial cell mechanotransduction”, *Proc Biomed Eng Soc Annual Meeting*, 2020
5. Kudernatsch S, Wolfe C, Ferdowsi H, **Peterson DR**, “Machine learning approach to hand-arm motion prediction for active upper extremity occupational exoskeleton devices”, *Proc Hum Fac Erg Soc*, 2020
6. Azad A, Tahernezehadi M, **Peterson DR**, “Deepening engineering design experience: A novel approach to senior design”, *Proc Am Soc Eng Edu IL-IN Section Conf*, Purdue U, West Lafayette, IN, 2019
7. DeLeon-Nwaha T, **Peterson DR**, “Changes in standing posture and body weight resulting from upper extremity momentum during the execution of touchscreen tasks”, *Proc Biomed Eng Soc Annual Meeting*, Atlanta, GA, 2018
8. Patil Y, Korampally V, Shapiro T, Dotseth K, Horn J, Griffin D, Pushparajan D, **Peterson DR**, “Microfluidic programmable lab-on-paper devices”, *Proc Biomed Eng Soc Annual Meeting*, Atlanta, GA, 2018
9. Kudernatsch S, **Peterson DR**, “Biomechanical testing of an upper-extremity occupational exoskeleton – Preliminary report on methodologies and pilot data”, *Proc Hum Fac Erg Soc*, Philadelphia, PA, 2018
10. Asaki T, Naron C, Kudernatsch S, **Peterson DR**, “Low-cost mobile data-logging system to track patient condition and location”, *Proc Biomed Eng Soc Annual Meeting*, Phoenix, AZ, 2017
11. DeLeon-Nwaha T, **Peterson DR**, “A comprehensive technique to investigate differences in upper-extremity movement during a touch screen task within an open and a constrained environment”, *Proc Biomed Eng Soc Annual Meeting*, Phoenix, AZ, 2017
12. Kudernatsch S, **Peterson DR**, “Robotic exoskeleton for upper extremity strength augmentation: REUESA”, *Proc Biomed Eng Soc Annual Meeting*, Phoenix, AZ, 2017
13. DeLeon-Nwaha T, **Peterson DR**, “A kinematic approach to understanding gender differences in upper extremity function during a man-machine interface task in a submariner environment”, *Proc Biomed Eng Soc Annual Meeting*, Minneapolis, MN, 2016
14. Kudernatsch S, Nidadavolu S, **Peterson DR**, “Average aneurysm wall stress and displacement in the common carotid artery increase with an increase in aneurysm size: Initial results using fluid-structure interaction simulations”, *Proc Biomed Eng Soc Annual Meeting*, Minneapolis, MN, 2016
15. Baril J, Horton K, Malkowski J, **Peterson DR**, “Ergonomic study and redesign of a medical device to enhance usability in female surgeon populations”, *Proc Biomed Eng Soc Annual Meeting*, Tampa, FL, 2015
16. Kudernatsch S, **Peterson DR**, “Low-cost method to create in vitro surrogates of common vessel bifurcations for cell plating and flow studies”, *Proc Biomed Eng Soc Annual Meeting*, Tampa, FL, 2015
17. Nagelschmidt M, Miesse A, Hodgkinson G, **Peterson DR**, “Evaluation and feasibility of a biodegradable magnesium staple”, *Proc Biomed Eng Soc Annual Meeting*, Tampa, FL, 2015
18. **Peterson DR**, Nidadavolu, Kudernatsch S, “Modeling changes in flow conditions throughout simulated aneurysm expansions”, *Proc Biomed Eng Soc Annual Meeting*, Tampa, FL, 2015
19. Strange K, Sparks C, Kudernatsch S, Asaki T, **Peterson DR**, “Electroencephalograph-based interface to control portable robotic exoskeleton for neuromuscular rehabilitation”, *Proc Biomed Eng Soc Annual Meeting*, Tampa, FL, 2015
20. Valdez T, Kavanagh KR, Kudernatsch S, **Peterson DR**, Cote V, “Modular 3D printed laryngeal models for surgical simulation”, *Proc Am Soc Pedi Otolaryng*, Boston, MA, 2015
21. Asaki T, Kudernatsch S, **Peterson DR**, “Preventing hand-arm vibration injuries by selecting gloves based on tool-specific vibrations”, *Proc Biomed Eng Soc Annual Meeting*, San Antonio, TX, 2014

22. Deleon-Nwaha T, **Peterson DR**, “Modeling influence of whole body vibration on upper extremity neuromuscular performance during space vehicle launch”, Proc Biomed Eng Soc Annual Meeting, San Antonio, TX, 2014
23. Kudernatsch S, Asaki T, **Peterson DR**, “Wearable biomechanical sensor system for vibration exposure and grip force measurements”, Proc Biomed Eng Soc Annual Meeting, San Antonio, TX, 2014
24. Longo K, **Peterson DR**, Valdez TA, “Novel device to diagnose otitis media using spectroscopy and digital imaging”, Proc Biomed Eng Soc Annual Meeting, San Antonio, TX, 2014
25. Pallares E, Kudernatsch S, Nidadavolu SS, **Peterson DR**, “Determining the influence of aneurysm geometry and location on flow through a carotid bifurcation”, Proc Biomed Eng Soc Annual Meeting, San Antonio, TX, 2014
26. Asaki T, Kudernatsch S, **Peterson DR**, “Incorporating a finger adapter into ISO 10819 to measure the vibration transmissibility of gloves at the fingers”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
27. Asaki T, **Peterson DR**, “Measuring the vibration transmissibility of gloves using different excitation conditions”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
28. Asaki T, **Peterson DR**, “Selecting tool-specific vibration-reducing gloves using ISO 5349 and ISO 10819 Measurements”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
29. Kudernatsch S, Asaki T, **Peterson DR**, “Design of a hand-mounted palm and finger adapter system to measure palm and finger forces and vibration exposures”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
30. Kudernatsch S, Asaki T, **Peterson DR**, “Transmissibility of ISO 10819 palm adapters made from conventional and 3D printed materials”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
31. Dong RG, Welcome DE, **Peterson DR**, Hewitt S, Xu S, McDowell TW, Warren C, Asaki T, Kudernatsch S, Brammer AJ, Cheriack MG, “Tool-specific effectiveness of vibration-reducing gloves for attenuating palm-transmitted vibration”, Proc 5<sup>th</sup> Am Conf on Human Vibration, Guelph, Ontario, Canada, June 2014
32. Longo K, **Peterson DR**, Valdez TA, “Bimodal approach using spectroscopy and digital imaging to assist otitis media diagnosis”, Proc 40<sup>th</sup> NE Bioeng Conf, Boston, MA, 2014
33. Nidadavolu SS, Kudernatsch S, **Peterson DR**, “Simulations involving three-dimensional cell monolayers in a parallel plate flow channel yields non-uniform shear stress distributions over cell surfaces”, Proc Biomed Eng Soc Annual Meeting, Seattle, WA, 2013
34. Tokarz CA, Kudernatsch S, Nidadavolu SS, **Peterson DR**, “Novel method to generate surrogate three-dimensional cell monolayer surfaces for use in computational fluid dynamic simulations”, Proc Biomed Eng Soc Annual Meeting, Seattle, WA, 2013
35. Mclsaac JH, **Peterson DR**, “Two low-cost tracking systems for 3-D imaging of the brachial plexus using 2-D ultrasound”, Proc 4<sup>th</sup> NWAC World Anesthesia Conf, Bangkok, Thailand, 2013
36. **Peterson DR**, Tantawy T, Seils D, Kueck AS, “Instrument tip displacements during manual and powered laparoscopic stapler use”, Soc Amer Gastroint Endosc Surg, Baltimore, MD, 2013
37. **Peterson DR**, Seils D, Tantawy T, Kueck AS, “Comparison of the time needed to complete a staple firing sequence between a manual and powered laparoscopic stapler”, Soc Amer Gastroint Endosc Surg, Baltimore, MD, 2013
38. Nidadavolu SS, **Peterson DR**, “Computational validation of uniform flow behavior within a large scale parallel plate flow chamber”, Proc Biomed Eng Soc Annual Meeting, Atlanta, GA, 2012
39. Boutros PJ, Lee CX, Mathews SJ, Wilkens PJ, **Peterson DR**, Mclsaac JH, “Novel 3-D brachial plexus reconstruction from 2-D ultrasound using XBOX Kinect tracking”, Proc Biomed Eng Soc Annual Meeting, Atlanta, GA, 2012
40. Brammer AJ, Yu G, Asaki T, **Peterson DR**, Eaman MJ, Cheriack MG, “Considerations for designing the next generation of vibrotactile threshold measuring instruments”, Proc 4<sup>th</sup> Am Conf on Human Vibration, Hartford, CT, 2012:97-98
41. Knapp RH, **Peterson DR**, Brammer AJ, Cheriack MG, “Second generation device for measuring daylong vibration exposure and grip force levels during hand-tool use”, Proc 4<sup>th</sup> Am Conf on Human Vibration, Hartford, CT, 2012:119-120
42. Tornifoglio SV, **Peterson DR**, “Minimum number of thin-film force sensors needed to represent overall hand grip force during tool use”, Proc 4<sup>th</sup> Am Conf on Human Vibration, Hartford, CT, 2012:50-51

43. **Peterson DR**, Seils D, Tantawy T, Kueck A, Roberts MKE, “Novel method for comprehensively assessing the biomechanical risks associated with the use of minimally-invasive surgical instruments”, Proc Soc Am Gastroint Endosc Surg, San Diego, CA, 2012:207
44. **Peterson DR**, Seils D, Tantawy T, Kueck A, Roberts MKE, “Review of surgical ergonomics research associated with minimally invasive surgery”, Proc Soc Am Gastro Endosc Surg, San Diego, CA, 2012:197
45. **Peterson DR**, Seils D, Tantawy T, Kueck A, Roberts MKE, “Comparing the biomechanical characteristics of manual and powered laparoscopic stapler designs”, Proc Soc Am Gastro Endosc Surg, San Diego, CA, 2012:197
46. Tornifoglio SV, **Peterson DR**, “Determining the minimum number of thin-film force sensors required to represent actual hand grip forces”, Proc 38<sup>th</sup> NE Bioeng Conf, Stony Brook, NY, 2012:223-224
47. Brammer AJ, Yu G, Bernstein ER, Cherniack MG, Tufts JB, **Peterson DR**, “Intelligibility of speech corrupted by nonlinear distortion”, Proc 10<sup>th</sup> International Congress on Noise as a Public Health Problem, London, UK, 2011:287-292
48. Bernstein ER, Brammer AJ, Yu G, Cherniack MG, **Peterson DR**, “Integrating speech enhancement with subband active noise control to improve communication in hearing protectors”, J Acoust Soc Am 2011; 130:2469
49. Asaki T, **Peterson DR**, Brammer AJ, Cherniack MG, “Changes in vibration and mechanical performance of high speed air turbine dental handpieces during clinical use”, Canadian Acoustics 2011; 39(2):120
50. Brammer AJ, Sutinen P, Toppila E, Pyykko I, Cherniack MG, Eaman MJ, **Peterson DR**, Starck J, “Longitudinal study of Suomussalmi forestry workers I – Vibrotactile thresholds”, Canadian Acoustics 2011; 39(2):18-19
51. **Peterson DR**, Brammer AJ, Toppila E, Cherniack MG, Sutinen P, Eaman MJ, “Longitudinal study of Suomussalmi forestry workers II – Vibration exposure”, Canadian Acoustics 2011; 39(2):40-41
52. Asaki T, **Peterson DR**, “Reducing biomechanical exposures to dental professionals by translating lab and clinical research into practice”, Proc Biomed Eng Soc Annual Meeting, Hartford, CT, 2011
53. Bernstein ER, Brammer AJ, Yu G, Cherniack, **Peterson DR**, “Integrating speech enhancement with active hearing protectors to improve communication”, Proc Biomed Eng Soc Annual Meeting, Hartford, CT, 2011
54. Qadri MJ, **Peterson DR**, “Translating long duration human movement into musculoskeletal injury prevention strategies”, Proc Biomed Eng Soc Annual Meeting, Hartford, CT, 2011
55. Solomito MJ, Lee MC, **Peterson DR**, “Biomechanical Assessment of the Rotational Aspect of the Spine in Patients with Scoliosis”, Proc Biomed Eng Soc Annual Meeting, Hartford, CT, 2011
56. Tichon DJ, **Peterson DR**, “Finite Element Analysis of the Medial Meniscus During Rear End Low-Speed Collisions”, Proc Biomed Eng Soc Annual Meeting, Hartford, CT, 2011
57. Qadri MJ, **Peterson DR**, “A method for modeling long-duration joint motion”, Proc IEEE 37<sup>th</sup> NE Bioeng Conf, Troy, NY, 2011:1-2
58. Solomito MJ, Lee MC, **Peterson DR**, “Using Motion Analysis Technology to Reduce Radiographs in Patients with Scoliosis”, Proc IEEE 37<sup>th</sup> NE Bioeng Conf, Troy, NY, 2011:3-4
59. Tichon DJ, **Peterson DR**, “Effect of rear end low-speed collisions on the meniscus”, in Proc IEEE 37<sup>th</sup> NE Bioeng Conf, Troy, NY, 2011:5-6
60. Brammer AJ, Cherniack MG, Toppila E, Sutinen P, Lundstrom R, Nilsson T, Neely G, Morse T, Sinha A, Eaman MJ, **Peterson DR**, Warren N, “Towards a quantitative sensory test for hand numbness”, Proc 3<sup>rd</sup> Am Conf on Human Vibration, Iowa City, IA, 2010:41-42
61. **Peterson DR**, Asaki T, Brammer AJ, Cherniack MG, “Noise and vibration exposures to dental hygienists”, Proc 3<sup>rd</sup> Am Conf on Human Vibration, Iowa City, IA, 2010:49-50
62. Brammer AJ, Yu G, Bernstein ER, Cherniack MG, **Peterson DR**, “Predicting the intelligibility of speech corrupted by nonlinear distortion”, Canadian Acoustics 2010; 38(3):80-81
63. Bernstein ER, Brammer AJ, Yu G, Cherniack MG, **Peterson DR**, “Ear cup selection for feedforward active noise reduction hear protectors”, Canadian Acoustics 2010; 38(3):82-83
64. Yu G, Brammer AJ, Swan K, Tufts JB, Cherniack MG, **Peterson DR**, “Relationships between the modified rhyme test and objective metrics of speech intelligibility”, J Acoust Soc Am 2010; 127:1903
65. **Peterson DR**, Warren N, “Characterizing WMSDs through direct postural measurements in a nursery population”, Proc Northeast Center for Agricultural and Occupational Health, Cooperstown, NY, 2009
66. **Peterson DR**, Asaki T, Brammer AJ, Cherniack MG, “Sound and Vibration Exposures from Polishers and Scalars in a Dental Hygienist Population”, Canadian Acoustics 2009, 37(3):218-219 (*invited*)

67. Brammer AJ, Yu G, Bernstein ER, **Peterson DR**, Cherniack MG, Tufts JB, “Field measurement of sound pressure at the eardrum”, Inter-Noise 2009, Institute of Noise Control Engineering: Innovations in Practical Noise Control, Ottawa, Canada, 2009
68. Brammer AJ, Yu G, Bernstein ER, **Peterson DR**, Cherniack MG, Tufts JB, “Monitoring sound pressure at the eardrum for hearing conservation”, Canadian Acoustics 2009; 37(3):108-109 (*invited*)
69. Cherniack MG, Brammer AJ, Lundstrom R, Morse T, Neeley G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Bjor B, “Age and Neuropathies in Vibration Exposed Manual Workers”, Canadian Acoustics 2009; 37(3) (*invited*)
70. Morse TF, Cherniack MG, **Peterson DR**, Warren N, Sinha A, “Assessment of static standing exposures among manufacturing workers”, Proc. 138<sup>th</sup> Annual Meeting of Amer. Pub. Health Assoc., Philadelphia, PA, 2009
71. Brammer AJ, Cherniack MG, Toppila E, Sutinen P, Lundström R, Nilsson T, **Peterson DR**, Warren N, Morse TF, “Influence of change in work practices on vibrotactile perception: Preliminary analysis of a prospective study of forestry workers”, Proc 2<sup>nd</sup> Am Conf on Human Vibration, Chicago, IL, 2008:1-2
72. Bernstein ER, **Peterson DR**, “Next generation device for recording daylong hand-arm vibration and grip force waveforms”, Proc IEEE 33<sup>rd</sup> NE Bioeng Conf, Stony Brook, NY, 2007:100-101
73. Bill EJ, **Peterson DR**, “Distal upper extremity motion during keyboarding”, Proc 33<sup>rd</sup> NE Bioeng Conf, Stony Brook, NY, 2007:102-103
74. Chowaniec MJ, **Peterson DR**, “Dynamic loading of the shoulder during the Codman exercise”, Proc 33<sup>rd</sup> Northeast Bioeng Conf, Stony Brook, NY, 2007:5-6
75. Coates JO, **Peterson DR**, “Using a simplified marker configuration to determine Cardan angles of shoulder orientation”, Proc 33<sup>rd</sup> Northeast Bioeng Conf, Stony Brook, NY, 2007:7-8
76. **Peterson DR**, Brammer AJ, Cherniack MG, “Device for measuring daylong vibration exposure and grip levels during hand-tool use”, Proc 1<sup>st</sup> Amer Conf on Human Vibration, Morgantown, WV, 2006:20-21
77. Cherniack MG, Brammer AJ, Lundstrom R, Meyer JD, Morse TF, Nealy G, Nilsson T, **Peterson DR**, Toppila E, Warren N, “Prospective studies of vibration exposed cohorts: Hand-Arm Vibration International Consortium (HAVIC)”, Proc 1<sup>st</sup> Amer Conf on Human Vibration, Morgantown, WV, 2006:51-52
78. Ucanok G, **Peterson DR**, “Knee and ankle deviations during high-heeled gait”, Proc 32<sup>nd</sup> Northeast Bioeng Conf, Philadelphia, PA, 2006:17-18
79. Brammer AJ, **Peterson DR**, Cherniack MG, Gullapalli S, Crabtree RB, “Maintaining speech intelligibility in communication headsets equipped with active noise control”, Canadian Acoustics 2004; 32(3):132-133
80. Brammer AJ, **Peterson DR**, Cherniack MG, Gullapalli S, “Active hearing protectors: Prospects for improving speech intelligibility while maintaining noise reduction and audibility of warning alarms”, J Acoust Soc Am 2005; 117(4):2480-2481 (*invited*)
81. Brammer AJ, **Peterson DR**, Cherniack MG, Gullapalli S, “Influence of control structure and sound reproduction on the intelligibility of speech in headsets with active noise control”, J Acoust Soc Am 2004; 116(4):2595 (*invited*)
82. **Peterson DR**, Brammer AJ, Cherniack MG, “Provoked responses in tactile perception from exposure to simulated power tool vibrations”, Proc 10<sup>th</sup> Intl Con Hand-Arm Vib, Las Vegas, NV, June 2004:145-146
83. Cherniack MG, Morse TF, Brammer AJ, Lundstrom R, Meyer J, Nilsson T, **Peterson DR**, Toppila E, Warren N, Fu RW, Bruneau H, Croteau M, “A 13-year revisit of a shipyard characterized by high levels of vibration-induced disease”, Proc 10<sup>th</sup> Intl Conf on Hand-Arm Vibration, Las Vegas, NV, June 2004:61-62
84. Cherniack MG, Brammer AJ, Lundstrom R, Meyer J, Morse TF, Nealy G, Nilsson T, **Peterson DR**, Toppila E, Warren N, Fu RW, Bruneau H, “Segmental nerve conduction velocity in a vibration exposed population”, Proc 10<sup>th</sup> Intl Conf on Hand-Arm Vibration, Las Vegas, NV, June 2004:71-72
85. Cherniack MG, **Peterson DR**, Brammer AJ, “Human factors and the translation of laboratory studies into the workplace: The case of power tools”, Ramazzini Society Proceedings, Carpi, Italy, 2003
86. **Peterson DR**, Brammer AJ, Cherniack MG, “Threshold shifts in tactile perception at the fingertips induced by exposure to simulated power tool impacts and continuous vibration”, Proc NORA Symposium – Working Partners: Applying Research to Practice, National Institute for Occupational Safety and Health (NIOSH), Arlington, VA, Jun 2003:58
87. **Peterson DR**, Cherniack MG, “A method for quantifying the biodynamics of complex human movement: An application to computer keyboard typing”, Proc 12<sup>th</sup> Intl Conf Mech in Med and Biol, 2002:277-278

88. **Peterson DR**, Brammer AJ, Cherniack MG, "Laboratory investigation of tactile perception and simulated power tool operation: Applications for injury biomechanics", Proc 12<sup>th</sup> Intl Conf Mech in Med and Biol, 2002:196-198
89. **Peterson DR**, Brammer AJ, Cherniack MG, "Temporary changes in vibrotactile perception during operation of impact power tools: A preliminary report", Canadian Acoustics 2002; 114
90. **Peterson DR**, Cherniack MG, Brammer AJ, "Method for simulating temporal and impulsive characteristics of hand tools to model vibrotactile TTS", Ann Biomed Eng 2001; 28(S1):S-127
91. Brammer AJ, **Peterson DR**, Cherniack MG, "Characterizing exposure to hand-transmitted impacts", Intl Congress of Occupational Health – X2001 Exposure Assessment in Epidemiology and Practice, Gothenburg, Sweden, Jun 2001;290-292
92. **Peterson DR**, Cherniack MG, "Repetitive impacts from manual hammering: Physiological effects on the hand-arm system", Canadian Acoustics 2001:12-13
93. **Peterson DR**, Cherniack MG, "Vibration, grip force, muscle activity, and upper extremity movement of a manual hammering task", Proc 9<sup>th</sup> Intl Conf on Hand-Arm Vibration, Nancy, France, 2001
94. Wadhwa S, Godwin S, **Peterson DR**, Freeman A, Epstein MAF, Pilbeam CC, "Fluid Shear Stress Transcriptionally Induces Cyclooxygenase-2 Expression in Murine Osteoblasts", Proc 22<sup>nd</sup> Amer Soc Bone Mineral Res, Toronto, Canada, 2000
95. **Peterson DR**, Cherniack MG, Epstein MAF, "Digital infrared motion capture of hand and digit motion during computer keyboard typing", Ann Biomed Eng 1998, 26(S2):S-118
96. Lundberg C, **Peterson DR**, "Regulation of PGHS-2 and PGS by fluid shear stress", Proc Ann Meeting Northeastern Soc Orthodontists, Lake Buena Vista, FL, 1996
97. **Peterson DR**, Epstein MAF, Bennett JC, "Design and validation of a large scale flow chamber for exposure of cells to controlled shear stress conditions", Ann Biomed Eng 1995; 23(S1):S-53

## TEXTBOOK CHAPTERS AND SECTIONS

---

1. **Peterson DR**, Adrezin R, "Biodynamics: A Lagrangian Approach", in The Standard Handbook of Biomedical Engineering and Design, Myer Kutz, Editor, McGraw-Hill, NY, (2003; 1<sup>st</sup> Edition) – 2<sup>nd</sup> Edition, Chapter 10, 2009
2. Brammer AJ, **Peterson DR**, "Vibration, Mechanical Shock, and Impact", in The Standard Handbook of Biomedical Engineering and Design, Myer Kutz, Editor, McGraw-Hill, NY, (2003; 1<sup>st</sup> Edition) (2009, 2<sup>nd</sup> Edition), 3<sup>rd</sup> Edition, 2021 (*in progress*)
3. **Peterson DR**, "Biomechanics", 20-Chapter Section in The Biomedical Engineering Handbook, Joseph D. Bronzino, Editor, CRC Press/Taylor and Francis, FL, (2006; 3<sup>rd</sup> Edition) – 4<sup>th</sup> Edition, 2015
4. **Peterson DR**, "Human Performance Engineering", 12-Chapter Section in The Biomedical Engineering Handbook, Joseph D. Bronzino, Donald R. Peterson, Editors, CRC Press/Taylor and Francis, FL – 4<sup>th</sup> Edition, 2015
5. **Peterson DR**, "Artificial Organs", 7-Chapter Section in The Biomedical Engineering Handbook, Joseph D. Bronzino, Donald R. Peterson, Editors, CRC Press/Taylor and Francis, FL – 4<sup>th</sup> Edition, 2015

## TEXTBOOKS

---

1. **Peterson DR**, Bronzino JD, Biomechanics: Principles and Applications, CRC Press/Taylor and Francis, FL, 2007
2. Analoui M, Bronzino JD, **Peterson DR**, Medical Imaging: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
3. Diakides M, Bronzino JD, **Peterson DR**, Medical Infrared Imaging: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
4. Fisher J, Mikos A, Bronzino JD, **Peterson DR**, Tissue Engineering: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
5. Liang H, Bronzino JD, **Peterson DR**, Biosignal Processing: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
6. Peattie R, Fisher R, Bronzino JD, **Peterson DR**, Transport Phenomena in Biomedical Engineering: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012

7. Schaffer D, Bronzino JD, **Peterson DR**, Stem Cell Engineering: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
8. Wong J, Bronzino JD, **Peterson DR**, Biomaterials: Principles and Practices, CRC Press/Taylor and Francis, FL, 2012
9. **Peterson DR**, Bronzino JD, Biomechanics: Principles and Practices, CRC Press/Taylor and Francis, FL, 2015
10. Schreiner S, Bronzino JD, **Peterson DR**, Medical Instruments and Devices: Principles and Practices, CRC Press/Taylor and Francis, FL, 2015

## HANDBOOKS

---

1. Bronzino JD, **Peterson DR**, The Biomedical Engineering Handbook, 4<sup>th</sup> Edition (4 Volume Set), CRC Press/Taylor and Francis, FL, 2015
  - Biomedical Engineering Fundamentals, Volume I (1,180 pages)
  - Medical Devices and Human Engineering, Volume II (891 pages)
  - Biomedical Signals, Imaging, and Informatics, Volume III (1,468 pages)
  - Molecular, Cellular, and Tissue Engineering, Volume IV (1,891 pages)
2. **Peterson DR**, The Biomedical Engineering Handbook, 5<sup>th</sup> Edition (5 to 6 Volume Set; ~50 Sections), CRC Press/Taylor and Francis, FL (*in progress – January 2026*)

## PATENTS AND INVENTION DISCLOSURES

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### Patents

1. **Peterson DR**, Kudernatsch S, Birk J, Syringe Hand Grip Adapter (US D1,084,320 S, 07/15/2025)
2. **Peterson DR**, Kudernatsch S, Birk J, Syringe Hand Grip Adapter (US D1,073,938 S, 05/06/2025)
3. **Peterson DR**, Kudernatsch S, Birk J, Bite Block Device (US D1,037,460 S, 07/30/2024)
4. **Peterson DR**, Kudernatsch S, Birk J, Syringe Hand Grip Adapter (US 2024/0075212 A1, 03/07/2024; *assigned on 08/26/2025 and awaiting number*)

### Patent Applications

1. **Peterson DR**, Kudernatsch S, Birk J, Bite Block Device (US 2024/0075232 A1, 03/07/2024)
2. **Peterson DR**, Kudernatsch S, Valdez T, Modular Surgical Simulation Trainer for the Tracheoesophageal and Laryngeal Complex (US 2017/0169733 A1, 12/15/2017)

### Disclosure Notifications

1. **Peterson DR**, Berggren J, Frank C, Keene J, Matthews K, Robotic Mobility Walker
2. **Peterson DR**, Asaki T, Kudernatsch S, Practical Design of an Anti-vibration Glove
3. **Peterson DR**, Kudernatsch S, Robotic Exoskeleton for Upper Extremity Strength Augmentation
4. **Peterson DR**, Kudernatsch S, Parallel Plate Flow Chamber for Precision-controlled Cellular Studies
5. **Peterson DR**, Smart Epinephrine Delivery System and Communication Protocol
6. **Peterson DR**, Smart Albuterol Inhalation and Monitoring System
7. **Peterson DR**, Smart Diaper System

## FUNDED PROJECTS (\$22,810,506)

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### CONGRESSIONAL APPROPRIATIONS

- |                |  |
|----------------|--|
| 4/1/02-9/30/03 | <u>2-1544 - Congressionally Directed Award</u> , NASA, \$2,500,000, "Development of a Laboratory for Improving Communication between Air Traffic Controllers and Pilots" |
| 1/1/23-9/30/24 | <u>Congressionally Directed Award</u> , Department of Education, \$1,500,000, "Microchip Research and Training, including Equipment"                                     |

**STATE LEGISLATIVE APPROPRIATIONS**

- 9/1/15-8/31/17 The State of Texas, \$1,800,000, "Nursing Program Expansion at Texas A&M University - Texarkana"
- 9/1/15-8/31/17 The State of Texas, \$1,650,000, "Student Success Program at Texas A&M University – Texarkana"

**APLU / NIST**

- 7/16/21-6/30/22 70NANB20H136, APLU / NIST-MEP Economic and Community Development Initiative (on *Leveraging Universities to Advance Manufacturing Innovation through the MEP Network*), \$90,000, "NIU-IMEC Partnership to Advance Manufacturing Innovation" (Role: PI)

**NIH**

- 9/30/99-9/29/03 R01 OH04025, NIOSH, \$638,194, "Temporal and Impulsive Characteristics of Hand Arm Vibration" (Role: Co-PI)
- 9/30/00-9/29/06 1U01 OH07312, CDC/NIOSH, \$1,775,775, "Exposure Response Relationship in Hand Arm Vibration" (Role: Co-I)
- 7/1/02-6/30/11 AR047673, NIH, \$3,700,000, "Mechanical Loading of Bone and Prostaglandins" (Role: Co-I)
- 7/1/06-6/30/11 1 U19 OH008857, NIOSH, \$1,513,380, Center for the Promotion of Health in the New England (CPH-NEW) Workplace (Lead Institution: U Mass., Lowell), "Health Improvement through Training and Employee Control" (Role: Co-I)
- 8/1/06-7/31/11 5 R01 OH008669, NIOSH, \$1,546,508, "Active Hearing Protectors and Audibility of Critical Communications" (Role: Co-I)
- 4/1/08-3/31/13 5 R01 OH008929-01A2, NIOSH, \$2,088,487, "Aging, Musculoskeletal Disorders and Work Capacity" (Role: Co-I)
- 9/1/09-8/31/14 5 R01 OH008997, NIH, \$2,187,172, "Glove and Tool Intervention to Reduce Hand-Arm Vibration" (Role: Co-PI)
- 9/21/11-8/31/12 1R13EB014689-01, NIH/NIBIB, \$10,000, "Biomedical Engineering Society 2011 Annual Meeting" (Role: PI)
- 4/28/23-8/31/25 75D30123P16383, NIOSH, \$48,000, "Testing of Knee Saver Devices in Deep Squatting Tasks" (Role: Co-PI)

**NSF**

- 9/21/11-8/31/12 1144998, NSF, \$20,000, "Biomedical Engineering Society 2011 Annual Meeting" (Role: PI)
- 8/1/20-7/31/23 2019748, NSF MRI, \$252,548, "Acquisition of a Zeiss LSM 900 with Airyscan 2 for Research and Education at Northern Illinois University" (Role: co-PI)

**NASA**

- 6/1/00-5/31/01 NASA Connecticut Space Grant Consortium (CSGC), \$12,000, "Development of a Biodynamic Model of Terrestrial Geologic Fieldwork with Implications on Martian Spacesuit and Martian Tool Development" (Role: PI)
- 3/1/06-7/31/07 NCC5-601, NASA/EPSCoR, (Lead Institution: U Hartford), \$13,000, "Development of Analytical Tools to Assist with Space Hardware Sizing and Selection" (Role: PI)
- 6/1/07-5/31/08 NASA/Johnson Space Center (*contract*), \$10,000, "Development of an Autonomous Motion Tracking System to Monitor Astronaut Movement within a Spacesuit" (Role: PI)
- 10/18/10-9/30/12 NASA/Johnson Space Center (*contract*), \$20,000, "Improvement of an Optic Fiber Motion Analysis System to Autonomously Monitor Astronaut Movement within a Spacesuit" (Role: PI)
- 7/1/18-6/30/20 NASA Illinois Space Grant Consortium (ISGC), \$82,501, "NIU/ISGC NASA Internships, Fellowships, and Scholarships, STEM Engagement, Institutional Engagement, Educator Professional Development Project" (Role: PI)

- 2/1/18-1/31/20 NASA Illinois Space Grant Consortium (ISGC), \$77,500, "NIU/ISGC NASA Internships, Fellowships, and Scholarships, STEM Engagement, Institutional Engagement, Educator Professional Development Project" (Role: PI)
- 10/1/19-5/15/21 NASA/Jet Propulsion Laboratory (*contract*), \$10,000, "Robotic Ultra-Sensitive Chemical Monitoring System for Human Safety" (Role: PI)
- 10/1/19-5/15/21 NASA/Jet Propulsion Laboratory (*contract*), \$10,000, "Distributed Carbon Dioxide Sensor Array for the International Space Station – Part I" (Role: PI)
- 6/1/20-5/31/21 NASA Illinois Space Grant Consortium (ISGC), \$20,808, "NIU/ISGC NASA Internships, Fellowships, and Scholarships, STEM Engagement, Institutional Engagement, Educator Professional Development Project" (Role: PI)
- 10/1/20-5/15/21 NASA/Jet Propulsion Laboratory (*contract*), \$10,000, "Distributed Carbon Dioxide Sensor Array for the International Space Station – Part II" (Role: PI)
- 10/1/21-5/15/22 NASA/Jet Propulsion Laboratory (*contract*), \$10,000, "Wireless Sensor Network Ground Testing for Eventual Application on the International Space Station" (Role: PI)
- 8/16/22-5/15/23 NASA/Jet Propulsion Laboratory (*contract*), \$10,000, "Portable Tunable Laser Spectrometer Array for Monitoring Trace Gases in the International Space Station" (Role: PI)

### **DOD**

- 10/1/14-9/31/17 N00014-15-1-2538, Office of Naval Research (ONR), \$14,999, "Technique to Measure Visual Proprioception with Respect to Human Performance" (Role: PI)

### **DOE**

- 7/1/16-1/31/17 28-S172812, Department of Energy/Sandia National Laboratory subcontract, \$15,000 (administered through Texas A&M University in College Station – PI: Robin Murphy), "Robotic Exoskeleton for Upper Extremity Strength Augmentation (REUESA)" (Role: subcontract PI)

### **TEXAS A&M UNIVERSITY SYSTEM**

- 1/1/15-12/31/17 AREA 41 Challenge Grant, Chancellor of Texas A&M University System, \$25,000, "Development and implementation of low-cost medical devices and technologies as a result of direct collaboration with clinical and industrial partners" (Role: PI)

### **SBIR**

- 8/1/04-7/31/05 SBIR A04-199, DoD/Army, \$69,152 (+\$20,848 from company), Phase I, "An Active Noise Reduction Communication Earplug for Helicopter Crew" (Role: Engineer/Scientist)

### **CLINICAL AND TRANSLATIONAL SCIENCE**

- 9/1/13-8/31/14 CiCATS (Connecticut Institute for Clinical and Translational Science), \$50,000, "Multi-Wavelength Video Otoscopy for the Diagnosis of Otitis Media" (Role: PI)

### **INDUSTRY**

- 5/1/98-4/30/99 Stanley Toolworks, Inc, \$59,373, "Measured Ergonomic Characteristics of Hammers" (Role: PI)
- 9/1/98-8/31/99 Office Ergonomics Research Committee (OERC), \$23,105, "Constructing a Taxonomy of Use for Computer Mouse Users" (Role: Co-PI)
- 10/1/99-9/30/01 CT Innovations, \$250,000, "Ergonomics Technology Center – Laboratory Development" (Role: PI)
- 1/15/05-6/30/06 DentalEZ, \$33,227, "Investigating the Acoustic and Vibration Behavior of the Solara Titanium Handpiece" (Role: PI)

- 11/1/05-12/31/09 National Dental Handpiece Repair Association, \$10,000, “A Comparison Study of the Performance Characteristics of New, Generic Aftermarket, and Rebuilt High-Speed Air Turbines in Dental Handpieces” (Role: PI)
- 11/15/06-5/14/07 DentaleZ, \$22,802, “Modifying and Testing the Solara Titanium Handpiece” (Role: PI)
- 7/1/07-6/30/08 NEC/NYCAMH, \$19,831, “Pilot Testing Direct Postural Measurement Instrumentation in a Nursery Population” (Role: Co-PI)
- 4/15/09-4/14/10 NEC/NYCAMH, \$15,000, “Characterizing WMSDs through Direct Postural Measurement Instrumentation in a Nursery Population” (Role: PI)
- 1/1/11-12/31/12 Covidien, \$175,494, “Ergonomic Evaluation of Surgical Staplers” (Role: PI)
- 7/1/20-12/31/20 Illinois Manufacturing Excellence Center (IMEC), \$100,000 “NIU-IMEC Senior Design Collaboration” (Role: PI)
- 11/20/20-5/20/21 LifeFitness, \$21,388, “Evaluation of Tread Mill Designs” (Role: co-PI)
- 12/1/21-12/31/24 Milwaukee Tools, \$129,414.20, “Evaluation of Gloves and Materials” (Role: PI)

## **COMMUNITY COLLEGE**

- 1/24/13-9/31/14 Massachusetts Life Sciences Center, \$150,000, “Build It, Test It, Use It, Fix It: Life Sciences Education at Springfield Technical Community College (STCC)” (Role: Initial Program Coordinator)

## **OVERVIEW OF ACADEMIC INSTRUCTION**

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### ➤ ***MEDICINE, DENTAL MEDICINE, AND PUBLIC HEALTH***

#### **UNIVERSITY OF CONNECTICUT HEALTH CENTER**

##### **School of Dental Medicine**

2005-2010 Lecturer, Biodontics (DENT 440), Dental Residency Program

##### **School of Medicine**

2002-2014 Co-Instructor, PCM1 CBE Occupational Health Module

2001-2009 Co-Instructor, Human Systems, (Anatomy, Physiology, and Dissection of Extremities, Pectoral Girdle, and Back) – *Gross Anatomy for all first-year Medical and Dental Students*

##### **School of Medicine, Division of Occupational and Environmental Medicine**

1999-2014 Instructor, Clinical Aspects of Biodynamics and Ergonomics for Medical Residents and Physicians

##### **School of Medicine, Division of Public Health and Population Sciences**

1999-2014 Co-Instructor and Co-Developer, Exposure Assessment Methods in Ergonomics (Cross-Listed with Biomedical Engineering Program)

1999-2014 Co-Instructor and Co-Developer, Introductory Ergonomics for Biomedical Scientists and Engineers (Cross-Listed with Biomedical Engineering Program)

### ➤ ***ENGINEERING AND COMPUTER SCIENCE***

#### **NORTHERN ILLINOIS UNIVERSITY**

##### **College of Engineering and Engineering Technology**

2022-2023 Instructor and Developer, Topics in Engineering and Engineering Technology - Engineering Internship, (IEET 490, 3 Credits, Undergraduate)

2021-2023 Co-Instructor, Transition to the Profession of Engineering (UEET 301, 1 Credit, Undergraduate)

2021-2023 Co-Instructor, Introduction to Engineering, (UEET 101, 1 Credit, Undergraduate)

**Biomedical Engineering Program**

- 2022-2023 Instructor and Developer, Biotransport, (BME 435, 3 Credits, Undergraduate)
- 2019-2023 Lead Instructor, Primary Lecturer, Course Director and Developer, Senior Biomedical Engineering Design I and II (BME 495 and BME 496, 6 Credits, 2 semesters, Undergraduate)
- 2019-2023 Instructor, Independent Study (BME 497, 1 to 6 Credits, Undergraduate)

**Department of Computer Science**

- 2021-2023 Lead Instructor, Primary Lecturer, Course Director and Developer, Computer Science Senior Design I and II, (CSCI 497, 6 Credits, 2 semesters, Undergraduate)

**Department of Electrical Engineering**

- 2018-2023 Lead Instructor, Primary Lecturer, Course Director and Developer, Senior Electrical Engineering Design I and II (ELE 495 and ELE 496, 6 Credits, 2 semesters, Undergraduate)

**Department of Mechanical Engineering**

- 2024-2025 Instructor, Engineering Mechanics: Statics and Dynamics (MEE 209, 4 Credits, Undergraduate)
- 2024-2025 Instructor, Engineering Mechanics I (MEE 210, 3 Credits, Undergraduate)
- 2023-2024 Instructor, Pre-Candidacy Research (MEE 797, 1 to 6 Credits, Graduate)
- 2021-2024 Instructor, Independent Study (MEE 697, 1 to 3 Credits, Graduate)
- 2020-2021 Instructor, Independent Study (MEE 497, 1 to 3 Credits, Undergraduate)
- 2018-2023 Lead Instructor, Primary Lecturer, Course Director and Developer, Senior Mechanical Engineering Design I and II (MEE 485 and MEE 486, 6 Credits, 2 semesters, Undergraduate)

**Mechatronics Engineering Program**

- 2021-2023 Lead Instructor, Primary Lecturer, Course Director and Developer, Mechatronics Engineering Senior Design I and II (MCTR 481 and MCTR 482, 6 Credits, 2 semesters, Undergraduate)

**TEXAS A&M UNIVERSITY – TEXARKANA****College of Science, Technology, Engineering, Mathematics, and Nursing**

- 2015-2017 Instructor and Developer, Engineering Internship I and II (ENGR 431 and ENGR 432, 3 Credits each, Undergraduate)

**Department of Computer Science**

- 2015-2017 Lead Instructor, Primary Lecturer, Course Director and Developer, Computer Science Senior Design I and II, (CS 490 and CS 491, 6 Credits, 2 semesters, Undergraduate)

**Department of Electrical Engineering**

- 2015-2017 Lead Instructor, Primary Lecturer, Course Director and Developer, Electrical Engineering Senior Design I and II, (EE 490 and EE 491, 6 Credits, 2 semesters, Undergraduate)

**UNIVERSITY OF CONNECTICUT****Department of Biomedical Engineering**

- 2013-2014 Lead Instructor, Primary Lecturer, Course Director and Developer, Biomedical Engineering Design I and II, (BME 4900 and BME 4910, 6 Credits, 2 semesters, Undergraduate)
- 2012-2014 Instructor, Course Director and Developer, Biofluid Mechanics (BME 4985, 3 Credits, Undergraduate)
- 2010-2013 Co-Instructor, Biomedical Engineering Design I and II, (BME 4900 and BME 4910, 6 Credits, 2 semesters, Undergraduate)
- 2011-2012 Instructor, LabVIEW Basics for Biomedical Engineers (BME 3120, 1 Credit, Undergraduate)
- 2011 Instructor, Bioinstrumentation, (BME 4500, 3 Credits, Undergraduate)

2010-2014	Instructor and Developer, <u>Biomedical Engineering Communication, Seminars, and Events</u> (BME 4985, 1 Credit, Undergraduate)
2010	Instructor, <u>Statics and Dynamics for Biomedical Engineers</u> (BME 3150, 3 Credits, Undergraduate)
2009-2014	Major Advisor, <u>Doctoral Dissertation Research</u> (BME 6950, 1 to 9 Credits, Graduate)
2008-2012	Instructor and Developer, <u>Biomedical Engineering Communication, Seminars, and Events</u> (BME 6085, 1 Credit, Graduate)
2001-2014	Instructor, Course Director and Developer, <u>Biofluid Mechanics</u> (BME 6610, 3 Credits, Graduate)
2000-2014	Instructor, Course Director and Developer, <u>Biodynamics</u> (BME 6630, 3 Credits, Graduate)
2000-2014	Major Advisor, <u>Masters Thesis Research</u> (BME 5950, 1 to 9 Credits, Graduate)
1999-2014	Instructor, Course Director, Developer, <u>Human Biomechanics</u> (BME 5600, 3 Credits, Graduate)
1999-2014	Co-Instructor and Co-Developer, <u>Exposure Assessment Methods in Ergonomics</u> (BME 5341, 3 Credits, Graduate, Cross-Listed with Public Health Program)
1999-2014	Co-Instructor and Co-Developer, <u>Introductory Ergonomics for Biomedical Scientists and Engineers</u> (BME 5339, 3 Credits, Graduate, Cross-Listed with Public Health Program)

## OVERVIEW OF ACADEMIC ADVISING

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### Northern Illinois University

2024	Major Advisor in Mechanical Engineering B.S. Program to <b>14</b> students
2022-2024	Major Advisor in Mechanical Engineering Ph.D. Program to <b>1</b> student
2020-2023	Major Advisor in Biomedical Engineering (BME) B.S. Program to <b>26</b> students
2019-2021	Major Advisor in Mechanical Engineering M.S. Program to <b>1</b> student

### Texas A&M University

2015-2021	Major Advisor in BME Ph.D. Program to <b>1</b> student
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### University of Connecticut

2010-2014	Major Advisor in BME B.S. Program to <b>171</b> students
2009-2017	Major Advisor in BME Ph.D. Program to <b>5</b> students
2001-2013	Major Advisor in BME Department to <b>23</b> students (courses only degree)
2000-2015	Major Advisor in BME M.S. Program to <b>30</b> students (thesis- or project-based degree)



<b>Ph.D. GRADUATE STUDENTS (Served as Chair)</b>				
<b>NAME</b>	<b>PRIOR INSTITUTION</b>	<b>AREA OF CONCENTRATION</b>	<b>PROJECT</b>	<b>TRAINING PERIOD</b>
<b>UCONN</b>				
Takafumi Asaki	U Hartford (B.S., M.Eng.), U Conn. (M.S.)	Biomedical Engineering	Lab and field based approach for the selection of tool-specific vibration-reducing gloves	2009-2014
Rena Eudy	U Virginia (B.S.), Brown U (M.S.)	Biomedical Engineering	A multiscale systems model for advancement of a new line of therapy for osteoporosis ( <i>initial major advisor</i> )	2011-2015
Matthew John Solomito	WNEU (B.S.), U Conn. (M.S.)	Biomedical Engineering	Lagrangian approach to modeling the biodynamics of the upper extremity: Applications to collegiate baseball pitching	2012-2015
Alanna Ocampo Pelland	U Conn. (B.S., M.S.)	Biomedical Engineering	Pharmacokinetics and Pharmacodynamics – Vitamin D metabolism ( <i>initial major advisor</i> )	2012-2014
Tanimu Deleon-Nwaha	Manhattan Coll. (B.S., M.S.)	Biomedical Engineering	Investigating gender differences in the biomechanics of goal directed movements of the upper extremity	2012-2017
<b>TEXAS A&amp;M</b>				
Simon Kudernatsch	U Hartford (B.S.), U Conn. (M.S.)	Biomedical Engineering	A comprehensive approach to exoskeleton device evaluation and design	2015-2021
<b>NIU</b>				
Parisa Torkinejad Ziarati	U Isfahan (B.S.), NIU (M.S.)	Industrial Engineering	Human response to high frequency hand-arm vibration exposures	2021-

<b>M.S. GRADUATE STUDENTS (Served as Chair)</b>			
<b>NAME</b>	<b>AREA OF CONCENTRATION</b>	<b>TRAINING PERIOD</b>	<b>THESIS TITLE</b>
<b>UCONN</b>			
Stephanie Atkinson	Biomedical Engineering	2000-2001	Experimental investigations of fluid velocity patterns and wall shear stress levels in patient-based models of abdominal aortic aneurysm
Gizem Ucanok	Biomedical Engineering	2004-2006	Implications of heel height on knee and ankle joint deviations during female gait
Matthew Chowaniec	Biomedical Engineering	2005-2007	Dynamic loading of the shoulder during the Codman Exercise
Jayne Coates	Biomedical Engineering	2005-2007	Using a simplified marker configuration to determine shoulder orientation
Eric Bernstein	Biomedical Engineering	2005-2008	Portable data logging system for long-duration field measurement of biomechanical waveforms: Application to anatomical joint angles and vibration exposures
Erin Bill	Biomedical Engineering	2005-2008	A method for normalizing distal upper extremity motion during computer keyboarding
Abhijit Deb Roy	Biomedical Engineering	2008-2011	Effect of prostaglandin E2 on mechanical stresses applied by MC3T3-E1 osteoblast-like cells on a soft hydrogel substrate

Maria Qadri	Biomedical Engineering	2009-2011	Noninvasive assessment of joint motion over long durations: System evaluation and data analysis methods
Matthew John Solomito	Biomedical Engineering	2008-2011	The use of motion analysis technology as an alternative means of assessing spinal deformity in patients with adolescent idiopathic scoliosis
Daniel Tichon	Biomedical Engineering	2010-2011	Finite element analysis of the effect of low-speed rear end collisions on the medial meniscus
Adithya Venkatesan	Biomedical Engineering	2009-2011	Automation of orthodontic wire tester for performing three point bending tests
Robert Knapp	Biomedical Engineering	2010-2012	Second generation data-logging system for long-duration field measurement of vibration exposure and grip force
Drew Seils	Biomedical Engineering	2010-2012	A comprehensive methodology for assessing biomechanical risks associated with hand tool use: Applied to laparoscopic surgical instruments
Tarek Tantawy	Biomedical Engineering	2009-2012	Determining upper extremity posture using a simplified marker configuration for biomechanical risk evaluation during tool use
Shane Tornifoglio	Biomedical Engineering	2010-2012	Development and application of a portable system to reliably measure grip forces using thin-film force sensors
Michael Bley Jorgensen	Biomedical Engineering	2011-2012	Automated point-of-care image processing methodology for the diagnosis of malaria
Marek Wartenberg	Biomedical Engineering	2011-2013	Design, fabrication and function validation of a myoelectric-activated torque-controlled robotic rehabilitation device
Sampat Sai Nidadavolu	Biomedical Engineering	2010-2013	Computational Fluid Dynamics (CFD) modeling of parallel plate flow chambers that investigate the mechanotransduction of shear forces on living cells in various physiological conditions
Simon Kudernatsch	Biomedical Engineering	2012-2014	Design of biomechanical sensor system for laboratory- and field-based measurements of hand-arm vibration exposures and palm and finger forces
Kaitlyn Marie Longo	Biomedical Engineering	2012-2014	Bimodal approach using spectroscopy and digital imaging to assist otitis media diagnosis
Jacob Baril	Biomedical Engineering	2013-2015	Ergonomic study and redesign of a medical device to enhance usability in laparoscopic surgical populations
Matthew Nagelschmidt	Biomedical Engineering	2013-2015	Evaluation and feasibility of a biodegradable magnesium staple
Brian Walter	Biomedical Engineering	2013-2015	Integration of bioinformatics with health care systems and devices

**M.S. GRADUATE STUDENTS (Served as Project Advisor)**

NAME	AREA OF CONCENTRATION	TRAINING PERIOD	PROJECT TITLE
<b>UCONN</b>			
Laura Cimino	Biomedical Engineering	2002-2003	The development of a portable data collection system to monitor the biodynamics of geologic field work for Martian spacesuit development
Jennifer Corey	Biomedical Engineering	2000-2005	Design of a parallel plate-flow chamber to expose a cultured monolayer of cells to a controlled fluid shear in a microgravity environment

Katelyn Burkhardt	Biomedical Engineering	2011-2013	Analysis of a method to track EVA-related biomechanics
Madison Nicole Tobar	Biomedical Engineering	2012-2013	Material characterization of stored porcine tissue used for surgical simulation
Brandon Lee Calavan	Biomedical Engineering	2011-2013	Biomechanics modeling for rehabilitation engineering
Christopher Tokarz	Biomedical Engineering	2011-2013	Method of capturing human movement using KINECT technology
Eduardo Pallares	Biomedical Engineering	2013-2014	Biofluid modeling of carotid artery aneurysms

<b>GRADUATE STUDENTS – ASSOCIATE ADVISOR / EXAMINATION COMMITTEE</b>				
<b>NAME</b>	<b>DEGREE PROGRAM</b>	<b>AREA OF CONCENTRATION</b>	<b>TRAINING PERIOD</b>	<b>THESIS TITLE</b>
<b>UCONN</b>				
Christopher Lundberg	M.D.S. (during dental residency)	Orthodontics	1994-1997	Regulation of inducible prostaglandin G/H synthase in bone cells by fluid shear stress
Izabella Gieras	M.S.	Biomedical Engineering	1999-2000	Decision support applications using statistical process control (SPC) and virtual instrumentation (VI)
Matthew Jenkins	M.S.	Biomedical Engineering	1999-2000	Investigation into the peristaltic contraction of the sigmoid colon by electrical stimulation: A pilot study in the pig
Christina Rideout	M.S.	Biomedical Engineering	1999-2000	Investigation of forces imposed upon the wrist during activities of daily living
Kenneth Shaw	M.S.	Biomedical Engineering	1999-2000	Development of a tibial slider to evaluate and validate a finite element model for friction in knee implants
Orlando Torres	M.S.	Biomedical Engineering	1999-2000	A noninvasive cardiopulmonary measurement system
Matthew Zawalich	M.S.	Biomedical Engineering	1999-2000	METRIXCE: A mobile, digital work order tool
Claudia Hix	M.P.H. (during medical residency)	Ergonomics	1997-2000	Constructing a taxonomy of use for computer mouse users
Sari London	M.S.	Biomedical Engineering	1999-2001	Investigation of upper body extremity biomechanics during the sports massage compression
Sunil Wadhwa	Ph.D.	Biomedical Science	1996-2002	Fluid shear stress induction of COX-2 expression in osteoblastic cells
Randy Trumbower	Ph.D.	Biomedical Engineering	2000-2003	Strategies to enhance FES-induced leg cycle ergometry for individuals with SCI
Takafumi Asaki	M.Eng. (U Hartford)	Mechanical Engineering	2002-2004	Design and analysis of a second-generation device for the evaluation of active and passive shoulder and knee proprioception
Mark Croteau	M.P.H. (during medical residency)	Ergonomics	2001-2004	The influence of stimulation point and regional body temperature on segmental nerve conduction velocity of the median and ulnar nerves in healthy subjects and subjects with carpal tunnel syndrome

Syeda Uzma Abbas	M.P.H. (during medical residency)	Ergonomics	2001-2004	Pinch force and work-related musculoskeletal disorders in dental professionals
Hassan Almarshad	Ph.D.	Biomedical Engineering	2004-2005	Dynamics of human eye vision: Study of the iris radial and circular muscles during distance and close visual stimuli
Rebecca Jarvis	Ph.D.	Biomedical Engineering	2003-2005	Quantification of staphylococcus epidermidis specific adhesion to ligand-modified substrata controlling fibronectin orientation using immobilized antibodies
Evelyn Faille	M.S.	Biomedical Engineering	2004-2006	Development of a pediatric monitoring device and stimulator for pediatric apnea of prematurity
Matthew Veilleux	M.S.	Biomedical Engineering	2005-2007	Non-Thesis
Michael Holbert	M.D.S (during dental residency)	Orthodontics	2005-2008	First order archwire deflections: Comparing conventional, active self-ligating and passive self-ligating brackets
Robert Pesce	M.D.S (during dental residency)	Orthodontics	2007-2010	Evaluation of rotational control and forces generated during first-order archwire deflections: A comparison of self-ligating and conventional brackets
Raja Abhilash Shah	M.D.S (during dental residency)	Orthodontics	2009-2012	Three-dimensional force systems produced by vertical v-bends in an arch wire
Paiyz E. Mikael	M.S.	Biomedical Engineering	2008-2010	Fabrication and characterization of novel reinforced biodegradable polymeric-water dispersible carbon nanotubes composite scaffolds for bone tissue regeneration
Mario Losa Llorente	M.S. (international student from U Madrid, Spain)	Mechanical Engineering	2011-2012	CFD simulation of the flow in a patient-specific left ventricle using CT scan to reconstruct geometry
Andrea Sarasola Sans	M.S. (international student from U Madrid, Spain)	Biomedical Engineering	2011-2012	Non-Thesis; Bioinstrumentation and neural control
Sarah Brittain	M.S.	Biomedical Engineering	2011-2013	Development and characterization of a bioactive injectable chitosan hydrogel for bone repair
Joseph Mummert	M.S.	Biomedical Engineering	2011-2013	Aortic tissue-stent mechanical interaction in transcatheter aortic valve replacement
Caitlin Martin	Ph.D.	Biomedical Engineering	2009-2013	(Transferred to GA Tech before defense) Transcatheter aortic valve modeling
Kewei Li	Ph.D.	Mechanical Engineering	2011-2013	Biomechanical simulations of transcatheter aortic valve
Thuy Pham	Ph.D.	Biomedical Engineering	2008-2013	Engineering analysis of minimally invasive mitral valve repair
Eric Sirois	Ph.D.	Mechanical Engineering	2009-2014	The use of computational fluids modeling in pre-operative planning of transcatheter valve replacement
Joseph Calderan	M.S.	Biomedical Engineering	2012-2014	Hemodynamics of the aortic root upon transcatheter aortic valve implantation
Keping Zuo	M.S.	Biomedical Engineering	2012-2014	Characterization of biomechanical properties of mitral valve chordae tendineae

Jennifer Nicole Etter	M.S.	Biomedical Engineering	2013-2015	Polyelectrolyte coatings for sequential delivery of growth factors: Automation and characterization
Sachin Agarwal	M.D.S (during dental residency)	Orthodontics	2012-2015	Comparison of root resorption, microbial colonization and periodontal status between clear aligners, self-ligating brackets and conventional brackets: A randomized controlled clinical trial
Stephany Santos	M.S.	Biomedical Engineering	2012-2015	Investigating simple shear mechanics of bovine cartilage using a triaxial shear test machine
<b>NIU</b>				
Vishnu Sai Prabhakarababu	M.S.	Industrial and Systems Engineering	2022-2024	The effect of exoskeleton use on balance control
Tyler Vogen	M.S.	Mechanical Engineering	2021-2023	Laboratory protocol for digital musculoskeletal modeling of the upper extremity while using an exoskeleton and performing overhead tasks
Justin Berdell	M.S.	Electrical Engineering	2020-2022	Smart handle design with machine learning for exoskeleton and/or vehicle control
Parisa Torkinejad Ziarati	M.S.	Mechanical Engineering	2020-2022	Exoskeletons and exposure to hand-arm vibration

<b>GRADUATE LABORATORY INTERNSHIPS</b>				
NAME	DEGREE PROGRAM	AREA OF CONCENTRATION	TRAINING PERIOD	
<b>UCONN – Graduate Students</b>				
Fredrick Fletcher	M.P.H.	Ergonomics		1998-2000
Terri Cavo	M.P.H.	Epidemiology		1998-2001
Yongqiang Feng	Ph.D.	Communication Sciences		2005-2006
Jeffrey Dussetschleger	M.P.H.	Epidemiology		2005-2006
Francyse Wintink Werner	M.S.	Biomedical Engineering		2005-2006
Ulysses Diva	Ph.D.	Statistics		2006-2008
Ashok Chaurasio	Ph.D.	Statistics		2010-2012
Kurt Peterson	Undeclared	Bioinstrumentation and Device Programming		2012-2013
<b>UCONN – Medical Residents</b>				
Orlando Torres	Occupational Medicine (Division of)	Occupational Biomechanics and Exposure		2004-2005
Frank Ferrell	Occupational Medicine (Division of)	Occupational Biomechanics and Exposure		2004-2005
Joseph DeAngelis	Orthopaedic Surgery (Department of)	Implant Biomechanics		2005-2006
<b>UMASS AMHERST – Graduate Student</b>				
Nancy Laurie	Ph.D.	Ergonomics		1999-2000
<b>UMASS LOWELL – Graduate Student</b>				
Judy Gould	Ph.D.	Ergonomics		2000-2001

<b>INTERNATIONAL STUDENT LABORATORY INTERNSHIPS (at UCONN)</b>			
<b>NAME</b>	<b>DEGREE PROGRAM</b>	<b>AREA OF CONCENTRATION</b>	<b>TRAINING PERIOD</b>
<b>UNIVERSITY OF STUTTGART, GERMANY</b>			
Klaus Hofmann	M.S.	Mechanical Engineering	3/2003-8/2003
<b>UNIVERSITY OF MADRID, SPAIN</b>			
Mario Losa Llorente	M.S.	Mechanical Engineering	8/2011-6/2012
Andrea Sarasola Sans	M.S.	Biomedical Engineering	8/2011-6/2012
<b>KINDAI UNIVERSITY, JAPAN</b>			
Kenta Tsuchiya	M.S.	Mechanical Engineering	8/2012

<b>GRADUATE INDEPENDENT STUDIES – INSTRUCTOR / MENTOR</b>			
<b>NAME</b>	<b>AREA OF CONCENTRATION</b>	<b>SEMESTER</b>	<b>INDEPENDENT STUDY TITLE</b>
<b>UCONN</b>			
Jennifer Corey	Biomedical Engineering	Spring 2001	Biofluids in tissue engineering
Jennifer Corey	Biomedical Engineering	Fall 2001	Tactile biomechanics
Takafumi Asaki	Biomedical Engineering	Spring 2005	Dental biomechanics
Francyse Wynne Wentink	Biomedical Engineering	Spring 2005	Biomechanics literature review of hand-finger motion capture
Gizem Ucanok	Biomedical Engineering	Fall 2005	Lower-extremity biomechanics
Erin Bill	Biomedical Engineering	Spring 2006	Upper-extremity biomechanics
Yongqiang Feng	Communication Sciences	Spring 2006	Biomechanics of speech pathology
Gizem Ucanok	Biomedical Engineering	Spring 2006	Clinical pediatric gait analysis
Eric Bernstein	Biomedical Engineering	Fall 2006	Data logger design for biomechanical measurements
Jayne Coates	Biomedical Engineering	Fall 2006	Autonomous systems for tracking human movement
Takafumi Asaki	Biomedical Engineering	Fall 2007	Lectures in Japan on biomechanics and human exposure and response
Jithu Roy	Biomedical Engineering	Fall 2009	Automation of orthodontic wire tester using LabVIEW
Matthew Solomito	Biomedical Engineering	Fall 2009	Clinical biomechanics and assessment of scoliosis
Adithya Venkatesan	Biomedical Engineering	Fall 2009	Software development for an orthodontic wire tester
Eric Bernstein	Biomedical Engineering	Fall 2010	Capture of human movement using inertial measurement units (IMU)
Robert Knapp	Biomedical Engineering	Fall 2010	Applied bioinstrumentation
Alanna Ocampo	Biomedical Engineering	Fall 2010	Investigation of methods for simulating Vitamin D metabolism
Maria Qadri	Biomedical Engineering	Fall 2010	Instrumentation systems for biomechanical field measurements
Tarek Tantawy	Biomedical Engineering	Fall 2010	Biomechanical interpretation of human movement from kinematic data
Daniel Tichon	Biomedical Engineering	Fall 2010	Finite element methods in biomechanics and injury

Marek Wartenberg	Biomedical Engineering	Fall 2010	Design of microcontroller interface to removable storage media for long-duration data logging
Robert Knapp	Biomedical Engineering	Fall 2010	Image analysis of synchrotron microCT images of bone
Drew Seils	Biomedical Engineering	Spring 2011	Analysis of various hand tool features and designs
Shane Tornifoglio	Biomedical Engineering	Spring 2011	Forces measurements in biomechanics
Matthew Kozachek	Biomedical Engineering	Spring 2012	Biomechanics of ophthalmology
Tanimu DeLeon-Nwaha	Biomedical Engineering	Fall 2012	Tactile biomechanics
Rena Eudy	Biomedical Engineering	Fall 2012	Developing a mechanistic model of Multiple Sclerosis for a SBIR application
Sampat Nidadavolu	Biomedical Engineering	Fall 2012	Computational fluid dynamics methods in biofluid mechanics
Madison Tobar	Biomedical Engineering	Fall 2012	Biomechanics of porcine peritoneum tissue stored under varying conditions (in co-op with Covidien)
Rena Eudy	Biomedical Engineering	Spring 2013	Continuing development of a mechanistic model of Multiple Sclerosis
Simon Kudernatsch	Biomedical Engineering	Spring 2013	Design of biomechanical sensors for field monitoring of hand-arm vibration exposure
Kaitlyn Longo	Biomedical Engineering	Spring 2013	Design, development, and clinical trials of a video fluoroscopic pediatric otoscope
Matthew Nagelschmidt	Biomedical Engineering	Spring 2014	Compatible biomaterials for dental and surgical applications
Eduardo Pallares	Biomedical Engineering	Spring 2014	CFD modeling of biofluids: bifurcations and aneurysms
Matthew Solomito	Biomedical Engineering	Spring 2014	Lagrangian Biodynamics
<b>NIU</b>			
Amber Fillmore	Mechanical Engineering (Human Biomechanics)	Fall 2019, Spring 2020	Exoskeletons and Human-Machine Interface
Parisa Torkinejad Ziarati	Mechanical Engineering (Human Biomechanics)	Spring 2023	Advanced Vibration Measurement and Monitoring Techniques
Parisa Torkinejad Ziarati	Mechanical Engineering (Human Biomechanics)	Spring 2024	Measurement and Assessment of Hand-Transmitted Vibration

**GRADUATE STUDENT GRANTS**

<b>NSF GRADUATE FELLOWSHIP APPLICATIONS – PRINCIPAL ADVISOR / MENTOR</b>			
<b>NAME</b>	<b>TITLE</b>	<b>AREA OF CONCENTRATION</b>	<b>PROPOSAL SUBMITTED</b>
<b>UCONN</b>			
Laura Cimino	The exposure response relationship in hand-arm vibration from the use of powered and non-powered construction tools	Biomedical Engineering	2002
Eric Bernstein	Development of a hybrid MR-hydraulic knee joint as next-generation prosthetic technology	Biomedical Engineering	2005

Jayne Coates	The biomechanics of human performance and device interaction with specific emphasis on females using hand tools designed with male anthropometry	Biomedical Engineering	2005
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<b>NASA CONNECTICUT SPACE GRANT COLLEGE CONSORTIUM STUDENT AWARDS – MENTOR / PROJECT LEAD</b>			
<b>NAME</b>	<b>TITLE</b>	<b>AREA OF CONCENTRATION</b>	<b>AWARD PERIOD</b>
<b>UCONN – Graduate Fellowships</b>			
Jennifer Corey	Identifying methods and technology for the future development of a force and tactile feedback system that can be incorporated into the EVA spacesuit glove	Biomedical Engineering	2000-2001
Jennifer Corey	Design of a parallel plate-flow chamber to expose a cultured monolayer of cells to a controlled fluid shear in a microgravity environment	Biomedical Engineering	2002-2003
Jayne Coates	Development of an autonomous motion tracking system to monitor astronaut movement within a spacesuit	Biomedical Engineering	2006-2007
Eric Bernstein	A system for monitoring biomechanics of human movement within a spacesuit	Biomedical Engineering	2007-2008
Katelyn Burkhardt	Evaluation of Optiflex human motion tracking system	Biomedical Engineering	2011-2012
Marek Wartenberg	Surface electromyography control of a 2DOF robotic manipulator	Biomedical Engineering	2011-2012
Tanimu DeLeon-Nwaha	Changes in proprioception in astronauts from exposure to vehicle vibration	Biomedical Engineering	2013-2014
<b>UCONN – Graduate Travel Grants</b>			
Jayne Coates	Travel award to accompany Dr. Peterson to NASA/JSC in Houston, TX	Biomedical Engineering	2006
Erin Bill	Travel award to accompany Dr. Peterson to NASA/JSC in Houston, TX	Biomedical Engineering	2007

**UNDERGRADUATE RESEARCH TRAINEES**

<b>UNDERGRADUATE INDEPENDENT STUDY – INSTRUCTOR</b>			
<b>NAME</b>	<b>AREA OF CONCENTRATION</b>	<b>SEMESTER</b>	<b>INDEPENDENT STUDY TITLE</b>
<b>UCONN (BME 4999)</b>			
Drew Seils	Biomedical Engineering	Fall 2009	Human motion analysis: Technology, principles, and applications
Shane Tornifoglio	Biomedical Engineering	Fall 2009	Human motion analysis: Technology, principles, and applications
Katelyn Burkhardt	Biomedical Engineering	Fall 2010	Design of a fluid flow apparatus for exposure of cells to fluid shear I: Computer Aided Design
Katelyn Burkhardt	Biomedical Engineering	Spring 2011	Design of a fluid flow apparatus for exposure of cells to fluid shear II: Flow visualization
Kathleen Cooney	Biomedical Engineering	Spring 2011	Clinical bioinstrumentation and its applications to Parkinson's Disease (in co-op with Mass. General Hospital and Harvard U)
Austin McMann	Biomedical Engineering	Spring 2011	Mechanics of dental instrumentation and related human exposures

Alexander Werne	Biomedical Engineering	Spring 2011	Clinical bioinstrumentation and its applications to Parkinson's Disease (in co-op with Mass. General Hospital and Harvard U)
Christopher Lee	Biomedical Engineering	Summer 2011	Cardiovascular outcomes research and reporting
Stephen Elovetsky	Biomedical Engineering	Fall 2011	Measurements in biomechanics and hand-arm vibration exposures
Brian Coleman	Biomedical Engineering	Spring 2012	Applied biomechanics
Matthew Conklin	Biomedical Engineering	Spring 2012	Laboratory methods in biomaterials
Ana Groff	Biomedical Engineering	Spring 2012	Biomechanics of balance and center of gravity
Nihit Mody	Biomedical Engineering	Spring 2012	Single domain antibodies to target breast cancer antigens
Kyle Briggs	Biomedical Engineering	Fall 2012	Biomedical Engineering communications
Jeffrey Giara	Biomedical Engineering	Fall 2012	Developing methods and technology for next generation newborn sequencing
Brandon Calavan	Biomedical Engineering	Fall 2012	Optimal wheelchair design for multi-terrain use based on human performance
Thomas Bachant	Biomedical Engineering	Spring 2013	Electronic medical record (EMR) software for mobile devices
Derek Holyoak	Biomedical Engineering	Spring 2013	Applications of human biomechanics in human performance modeling
Kyle Ward	Biomedical Engineering	Spring 2013	Applications of human biomechanics in human performance modeling
<b>TAMU-T (EE 499)</b>			
Nicholas Rose	Electrical Engineering	Summer 2016	Design and construction of a reflective light analysis system to assist with selection of building materials based on human perception
Alex Walker (LaTourneau Univ. Student)	Mechanical Engineering ( <b>MEGR 4993, LaTourneau U</b> )	Summer 2016	Development of a magneto-rheological fluid damper for use with robotic exoskeletons
<b>NIU (BME 497)</b>			
Allyson Bowgren	Biomedical Eng. (BME 497)	Fall 2020	Methods of assessing exoskeletons and human performance
Jacob Martinez	Biomedical Eng. (BME 497)	Spring 2021	Biotransport and biomimetic systems
Yeshua Chacha Gonzalez	Biomedical Eng. (BME 497)	Fall 2021	Design of biomedical engineering systems
Enosh Lim	Biomedical Eng. (BME 497)	Fall 2021	Biotransport and biomimetic systems
Allyson Bowgren	Biomedical Eng. (BME 497)	Spring 2022	Biotransport and biomimetic systems
Isabelle Vondra	Biomedical Eng. (BME 497)	Spring 2022	Biotransport and biomimetic systems
Emily Hebert	Biomedical Eng. (BME 497)	Summer 2022	Healthcare technology repair in low-resource settings
Isabelle Vondra	Biomedical Eng. (BME 497)	Fall 2022	Cellular biomechanics
Noah Engles	Biomedical Eng. (BME 497)	Summer 2023	Clinical and translational research design and outcomes

## UNDERGRADUATE RESEARCH INTERNSHIPS

Northern Illinois University  
 Undergraduate Research Internships in Biodynamics Laboratory for 1 student in BME and 1 student in Mechanical Engineering

**Texas A&M University - Texarkana**

2014-2016 Research Internships in STEM Innovation Laboratory for 1 student in Biology, 3 students in Electrical Engineering, and 1 student in Mechanical Engineering (from LaTourneau University)

**University of Connecticut Health Center**

2000-2013 Research Internships in Biodynamics Laboratory for 37 students from Programs in BME, Electrical Engineering, Geology, Mechanical Engineering, Neuroscience, Molecular and Cellular Biology

<b>INTERNATIONAL STUDENTS – LABORATORY INTERNSHIPS (at UCONN)</b>			
<b>NAME</b>	<b>DEGREE PROGRAM</b>	<b>AREA OF CONCENTRATION</b>	<b>TRAINING PERIOD</b>
<b>HOCHSCHULE ULM, GERMANY</b>			
Sonja Koneczny	B.S.	Medical Engineering	9/1999-3/2000
Hansjorg Huber	B.S.	Medical Engineering	9/2000-3/2001
Jochen Brunner	B.S.	Medical Engineering	9/2000-3/2001
Andre Stielow	B.S.	Medical Engineering	3/2001-8/2002
Michael Kraft	B.S.	Medical Engineering	3/2001-8/2002
Ute Guenther	B.S.	Computer Science	9/2001-2/2002
Max Singh	B.S.	Medical Engineering	9/2001-2/2002
Ruth Nilges	B.S.	Computer Science	2/2002-8/2003
Annett Krazter	B.S.	Computer Science	9/2002-2/2003

**UNDERGRADUATE CAPSTONE TRAINEES**

<b>SENIOR DESIGN PROJECTS (Served as Faculty Advisor)</b>		
<b>TITLE</b>	<b>TEAM MEMBERS</b>	<b>AREA OF CONC.</b>
<b>UCONN – 2007-2008</b>		
Design of an all-terrain wheelchair (Design led to formation of a start-up company called GO-MOTION)	Geoff Cullen, Carlton Forse, Ryan Gresh	Mechanical Engineering
<b>UCONN – 2011-2012</b>		
Near infrared spectroscopy for neonatal bladder monitoring	Andreana Panzo, Anna Nash, Joanna Morgan	Biomedical Engineering
Low-cost 3D conversion system for legacy 2D ultrasound machines	Peter Boutros, Christopher Lee, Stefan Mathews, Paul Wilkens	Biomedical Engineering
Creation of precision devices and in vitro model to test emerging therapies for wound healing	Matthew Curreri, Urania Michael, Musa Bilal	Biomedical Engineering

Device to optimize tracheotomy tube attachment in infants	Christine Filosa, Deborah Dorcemus, Matthew Turiano, Rose Palmer	Biomedical Engineering
Expandable growing rods for treatment of pediatric spinal deformity with reduced rate of infection	Jonathan Nip, Carly Romanowicz, Dalia Gonzalez	Biomedical Engineering
Automated IV catheter insertion device (Team 1)	Owen Search, Kurt Peterson	Biomedical Engineering
Automated IV catheter insertion device (Team 2)	Craig Hanna, Nick Woolsey, Kyle Hamilton	Biomedical Engineering
<b>UCONN – 2012-2013</b>		
Novel wireless sensor platform	Christine Mallek, Alex Tansey, Matthew Gajosik	Biomedical Engineering
Development of an electronic stethoscope	Nadjat Adoyi, James Coulson, Maren Wennberg	Biomedical Engineering
A disposable expiratory pressure manometer project	Nadjat Adoyi, James Coulson, Maren Wennberg	Biomedical Engineering
Endotracheal and gastric tube fixation	Jennifer Etter, Umar Razzaq, Ashley Reichert	Biomedical Engineering
Continuous urinary output monitoring system	Jennifer Etter, Umar Razzaq, Ashley Reichert	Biomedical Engineering
Pressure transducer and flow rate meter for controlled media delivery to Rat lung vasculature ex-vivo	Alex Gray, Jeffrey Roberge, Dean Walston	Biomedical Engineering
In vitro model to test emerging therapies for human wounds	Nicholas Jannetty, Adrienne King, Stephen Miller	Biomedical Engineering
Endoscopy bite block design	Linda Caporale, Alex Gale, Andy Xie	Biomedical Engineering
Endoscopic Retrograde Cholangiopancreatography (ERCP) sphincterome design	Linda Caporale, Alex Gale, Andy Xie	Biomedical Engineering
Robotic rehabilitative assistance and targeted muscle activation device	Brian Coleman, James Vallieres, Eric Sands	Biomedical Engineering
Intraluminal anastomosis evaluation method for Covidien	Matthew Conklin, Shreena Desai, Caroline Jackson	Biomedical Engineering
<b>UCONN – 2013-2014</b>		
Redesign of the personal epinephrine injection system	Spencer Beck, Ardheeshan Selvachandnan, Michael Stellan	Biomedical Engineering
Laryngeal surgery simulation station	Bozhidar Barakov, Joshua Dobbins, Alexander Gadecki	Biomedical Engineering
Three-dimensional imaging of the hand for use in occupational therapy	Julia Ariola, Christine Montagne, Sana Serhane	Biomedical Engineering
Design of an inhaler system for the control and management of asthma	Bryant Heimback, Matthew Schneiderhan, Cheng Yang	Biomedical Engineering
Robotic exoskeleton and rehabilitative assistive device	Lia Bonacci, Gregory Johnson, Dipanjan Saha	Biomedical Engineering
Contributions of thoracic motion to cervical and shoulder range of motion in patients suffering from cervical or shoulder pain symptoms	Kaichie Ho, Alekhya Revur, Jerry Sooklall	Biomedical Engineering
<b>TAMU-T – 2015-2016</b>		
Orthotic pressure feedback system	Juan Gomez, Clayton McDonnell, Kyle Price	Electrical Engineering
Environmental monitoring system	William Cody Power, Ryan Reed, Kenan Strange	Electrical Engineering
Intelligent irrigation control system	Janie Giles, Thomas Hammons, Lindsay Johnson	Electrical Engineering
Intelligent car control modular development	Lucus Allgood, Kenneth Hoelscher	Computer Science

Design of a vibratory platform to assess the effects of launch and re-entry vibration exposures on astronaut performance	Christopher Homes, Caleb Sparks	Electrical Engineering
<b>TAMU-T – 2016-2017</b>		
Smart hard hat for the mining, petroleum, and construction industries	Jonathan Hall, Taylor Hudson, Tabitha Hooper	Electrical Engineering
Therapeutic training reaction device using visual light for rehabilitation patients	Channing Ward, Justin Litton, Dustin Freeman	Computer Science and Electrical Engineering
Data tracking for first time quality reporting and visual Key Performance Index (KPI) board for gain sharing within a manufacturing facility	Sergio Encino, Andrew Cromwell	Computer Science
Driving simulator for use in actual vehicles to assess rehabilitation patient readiness for driving	Steven Firmin, Gabriel Fuglaar, Hannah Baik	Computer Science and Electrical Engineering
Mistake proof arbor and shaft assembly for line trimmers on an assembly line	Humberto Galvan, Jacob Smith	Computer Science
<b>NIU – 2017-2018 (Under Old Senior Design Program – ELE 491 and 492; MEE 481 and 482)</b>		
Robotic Mobility Walker for High School Student with Dystonic Cerebral Palsy	Michael Bockwoldt, Meiya Carter, Michael Duda, William Dedic, Hnin Lin, Matthew Martone, Jazael Medina, Fahad Mohammedusseini, Mark Pacyga	Electrical Engineering & Mechanical Engineering
Intelligent Communication Device for High School Student with Dystonic Cerebral Palsy	Steven BINDERUP, Peter Cole, Murray Fordyce, Marianne Guieb, Andrew Murphy	Electrical Engineering
Fix Your Back-Pack (Ergonomic Back Pack for College Students)	Pierick Fillon, Daniel Formas, Stephen Karkos, Samuel Vanderhei, John Wardaszka, Steven Yonkers	Mechanical Engineering
Arject - Electrothermal Rocket Thruster	Malachi Fischer-Porter, Daniel Trygstad, Michael Zawadzki	Mechanical Engineering
The Structural Harness for Enhanced Load Lifting (SHELL) Exoskeleton	Adebayo Adejinnie, Kate Chwistek, Dalsen Ferbert, Andrew Meyer, Ivan Rivera	Mechanical Engineering
<b>NIU – 2018-2019 (Under New Interdisciplinary Senior Design Program – ELE 495 and 496; MEE 485 and 486)</b>		
Enhanced Mobility Wheelchair (EMW)	Justin Cambell, Nathan Prebish, Wuthrich	Mechanical Engineering
Three-Dimensional Imaging of the Hand for Use in Occupational Therapy	Brooke Bailey, Maria Barlas, Amber Fillmore, Helia Lai	Electrical Engineering & Mechanical Engineering
Fluorescence Detection Device for Non-invasive Diagnosis of Diabetes	Hannah Medernach, Jessie Miles, Kristen O'Connor	Electrical Engineering & Mechanical Engineering
Exoskeleton Testing Grounds	Nicole Dumoulin, Patricia Dumoulin, Daniel Glabinski, Brianna Smyles	Mechanical Engineering
Smart Bag with Switchable Transparency Capability for Security Checks	Jesse Carrasco, Martin Carrasco, Michael Solorzano	Electrical Engineering & Mechanical Engineering
Autoinjector Integrated into a Phone Case	Martin Conneely, Mario Cordova, Nick Passeri	Mechanical Engineering
2D Optical Imaging	Amy Kofoed, Laura Vogl, Katelyn Zastrow	Electrical Engineering
Design and Development of Kinematically-Compliant Medical Exoskeleton for Upper Extremities	Kevin Au, Timothy Ross, Jack Weiland	Mechanical Engineering

Robotics Lift-Assistance System to Improve Industrial Ergonomics	Robert Anaya, German Ibarra, Marcin Jaskolski	Electrical Engineering & Mechanical Engineering
SciDrain - Chest Tube	Samuel Aluko, Alex Morales, Marcos Torrescano	Electrical Engineering
<b><i>NIU – 2019-2020 (ELE 495 and 496; MEE 485 and 486)</i></b>		
Robotic Exoskeleton for Neuromuscular Rehabilitation and Exercise, Fourth Generation	Aletta Johnson, Nicole Hoffmann, Moises Reynoso	Electrical Engineering & Mechanical Engineering
Enhanced Wheelchair (EMW) (Second Generation)	Joseph Jackson, Matthew Koehler, Fabian Mandujano	Mechanical Engineering
Automating Anti-Vibration Glove Testing Following ISO 10819	Ian Gilmour, Porfirio Navar, Arthur Sobiech	Mechanical Engineering
MR Fluids – Application to Occupational and/or Rehabilitation Exoskeletons	Timothy Barry, Zach Elliott, Ian Kowalski	Electrical Engineering & Mechanical Engineering
Smart Hand Tool Technology	Collin Klein, Milica Milovancevich, Benjamin Schulz	Electrical Engineering & Mechanical Engineering
SecuriBot – Low-cost Autonomous Sentinel Robot	Shawn Bennett, Aaron Freedkin, Joshua Leung, Yingnan Xu	Electrical Engineering & Mechanical Engineering
Integration of a NAO Robot with an Autonomous Mobile Platform	Mark Lanman, Edward Lukas, Nick Roark	Electrical Engineering
Robotic Mobility Walker for High School Student with Dystonic Cerebral Palsy, Second Generation	Jayce Berggren, Colin Frank, Joshua Keene, Kyle Matthews	Electrical Engineering & Mechanical Engineering
<b><i>NIU – 2020-2021 (ELE 495 and 496; MEE 485 and 486)</i></b>		
Integration of a NAO Robot with an Autonomous Mobile Platform (Phase II)	Bryce Jacob, Dylan Leon, Adam Bradley	Electrical Engineering & Mechanical Engineering
PLC-based Vibration Signature Analysis	Dexter King, Riley Plock, Ryan Shaw	Mechanical Engineering
SecuriBot – Low-cost Autonomous Sentinel Robot (Phase II)	Michael Brons, Jerrel Grays, Daniel Ingalsbe	Electrical Engineering & Mechanical Engineering
<b><i>NIU – 2021-2022 (BME 495 and 496; ELE 495 and 496; MEE 485 and 486)</i></b>		
Robotic Exoskeleton for Neuromuscular Rehabilitation and Exercise (Fifth Generation)	Samuel Hancock, Jalen Taylor, Malcom Walker	Biomedical Engineering & Mechanical Engineering
SecuriBot: Low-Cost Autonomous Sentinel Robot (Phase III)	Jorge Fernandez, Cindy Gomez, Kaylen Platt	Electrical Engineering, Mechanical Engineering, & Mechatronics Engineering
Enhanced Wheelchair (EMW) (Third Generation)	Acelyn Galsim, Lauren Gratzke, Inam Rab	Biomedical Engineering & Mechanical Engineering
Novel Mobility Device for Conjoined Twins	Allyson Bowgren, Stephen Loftis, Cristhian Ocana	Biomedical Engineering, Electrical Engineering, & Mechanical Engineering

<b>CAPSTONE PROJECTS WITH OTHER UNIVERSITIES (Served as Principal Advisor)</b>		
<b>TITLE</b>	<b>NAME (INSTITUTION)</b>	<b>AREA OF CONC.</b>
<b>UNIVERSITY OF HARTFORD - 1998-1999</b>		
Vibration mapping of the right hand during manual hammer use	Pedro Cabrerra	Biomedical Engineering
<b>UNIVERSITY OF HARTFORD - 1999-2000</b>		
Biomechanics of manual hammering	Lana Lucetti	Biomedical Engineering
<b>UNIVERSITY OF HARTFORD - 2000-2001</b>		
Biodynamic model of terrestrial geologic field work for use with Martian spacesuit and tool development	Kristi Palm	Biomedical Engineering
<b>UNIVERSITY OF HARTFORD - 2001-2002</b>		
Thermal Imaging: A method for noninvasive detection of vascular occlusions	David Aloj	Biomedical Engineering
Integrating motion capture data with VisualNASTRAN	Edward Timinski	Biomedical Engineering
<b>TRINITY COLLEGE - 2002-2003</b>		
The effect of body structure and composition on function of the elbow in hammering	David Constantine	Biomedical Engineering
Effects of high-heeled shoes on women's leg joints and bones	Gizem Ucanok	Biomedical Engineering
<b>TRINITY COLLEGE - 2006-2007</b>		
Transcutaneous Electrical Nerve Stimulation (TENS) modulated by pressure transducers as a haptic interface for the NASA spacesuit glove	Carter Erwin, Robert Maloof	Electrical Engineering
<b>UNIVERSITY OF HARTFORD - 2007-2008</b>		
Electro-goniometer field calibration, Phase I	Knittel Ansa	Biomedical Engineering
Electro-goniometer field calibration, Phase II	Chirstopher Diyaolu	Biomedical Engineering
Shoulder model project for electro-goniometer data logger	Arjun Karivaradhan	Biomedical Engineering
Electro-goniometer data logger	Luke Tharathattel	Biomedical Engineering
Dental handpiece performance testing	Matthew Waltz	Biomedical Engineering
<b>UNIVERSITY OF HARTFORD - 2010-2011</b>		
Evaluation of iPi motion capture software for potential use in difficult motion capture environments	Kayla Cloutier	Biomedical Engineering
Simulating FFT waveforms in LabVIEW for vibration applications	Chelsea Vendetti	Biomedical Engineering
Testing protocols for force sensor conditioning unit	Simon Kudersnatch	Biomedical Engineering

**UNDERGRADUATE STUDENT GRANTS AND SCHOLARSHIP**

<b>NASA CONNECTICUT SPACE GRANT COLLEGE CONSORTIUM STUDENT AWARDS – MENTOR / PROJECT LEAD</b>			
<b>NAME</b>	<b>TITLE</b>	<b>AREA OF CONCENTRATION</b>	<b>AWARD PERIOD</b>
<b>UCONN – Undergraduate Fellowships</b>			
Carter Erwin, Robert Maloof	Transcutaneous electrical nerve stimulation modulated by pressure transducers as a haptic interface for the NASA spacesuit glove	Electrical Engineering (Trinity College)	2006-2007
Brian Coleman	Robotic rehabilitative assistance and targeted muscle training device for low-gravity environments	Biomedical Engineering (UCONN)	2012-2013
<b>UCONN – Undergraduate Project Grants</b>			
Brain Coleman, Eric Sands, James Vallieres	Robotic rehabilitative assistance and targeted muscle training device for low-gravity environments	Biomedical Engineering (UCONN)	2012-2013
<b>UCONN – Undergraduate Senior Design Grants</b>			
Brain Coleman, Eric Sands, James Vallieres	Robotic rehabilitative assistance and targeted muscle training device for low-gravity environments	Biomedical Engineering (UCONN)	2012-2013
<b>UCONN – Undergraduate Travel Grants</b>			
Thomas Bachant	Travel award to accompany Dr. Peterson to medical device and clinical communities in Puerto Rico for prototype development and clinical implementation and trials of mobile EMR device	Biomedical Engineering (UCONN)	2012-2013
Brain Coleman, Eric Sands, James Vallieres	Travel award to accompany Dr. Peterson to NASA/JSC in Houston, TX	Biomedical Engineering (UCONN)	2012-2013

**UCONN HOLSTER SCHOLARS FIRST-YEAR HONORS RESEARCH PROGRAM – PRINCIPAL ADVISOR / MENTOR**  
(see [honors.uconn.edu/special-programs/holster-scholars](http://honors.uconn.edu/special-programs/holster-scholars))

<b>NAME</b>	<b>TITLE</b>	<b>AREA OF CONCENTRATION</b>
Kayvon Ghoreshi	Re-designing the Epinephrine injection pen (see <a href="http://honors.uconn.edu/2013/02/27/2013-holster-scholars">honors.uconn.edu/2013/02/27/2013-holster-scholars</a> )	Biomedical Engineering – Medical Devices and Biotechnology

**HIGH SCHOOL RESEARCH TRAINEES****Northern Illinois University**

2020-2021 Research Laboratory Summer Internships for 2 High School students from Stevenson High School (Illinois District 125)

**Texas A&M University - Texarkana**

2015-2016 Research Laboratory Summer Internships for 1 High School student from Texarkana High School (Texarkana ISD)

**University of Connecticut Health Center**

2007-2012 Research Laboratory Summer Internships for 13 Conn. High School students from the Greater Hartford Academy of Math and Science, East Windsor High School, and Manchester High School