

## Curriculum Vitae Dr. Gary Allen Mirka, PhD



### **Contact Information**

Department of Industrial and  
Manufacturing Systems Engineering  
3025 Black Engineering  
0049 Black Engineering (Lab)  
Iowa State University  
Ames, IA 50011

Phone: (515) 294-8661  
email: mirka@iastate.edu

### **Education**

The Ohio State University	PhD	1992	Industrial and Systems Engineering
The Ohio State University	MS	1988	Industrial and Systems Engineering
The Ohio State University	BS	1986	Industrial and Systems Engineering

### **Professional Experience**

2021-Present	University Professor, The John Ryder Professor & Director of Graduate Education	Department of Industrial and Manufacturing Systems Engineering, Iowa State University (ISU)
2016-2020	The John Ryder Professor, Director of Graduate Education & Director of Research	Department of Industrial and Manufacturing Systems Engineering, ISU
2011-2016	The John Ryder Professor & Associate Dean for Academic Affairs	College of Engineering, ISU
2009-2011	The John Ryder Professor & Department Chair	Department of Industrial and Manufacturing Systems Engineering, ISU
2007-2009	Professor & Department Chair	Department of Industrial and Manufacturing Systems Engineering, ISU
2006-2007	Professor & Associate Department Head	Department of Industrial and Systems Engineering, North Carolina State University (NCSU)
2005-2007	Director of Graduate Programs	Department of Industrial and Systems Engineering
1993-2007	Associate Faculty	Biomedical Engineering, NCSU
1998-2006	Associate Professor	Department of Industrial Engineering, NCSU
1992-1998	Assistant Professor	Department of Industrial Engineering, NCS

### **Professional Honors and Awards**

- (1) Fellow of the Ergonomics Society (2009)
- (2) The 1993 Volvo Award for Low Back Pain Research for a work entitled: "A Stochastic Model of Trunk Muscle Coactivation during Trunk Bending", presented at the 1993 Meeting of the International Society for the Study of the Lumbar Spine, Marseilles, France. (Full journal article appears in Spine 18(11), 1993 by Mirka GA and Marras WS).

### **University Honors and Awards**

- (1) IMSE Chair's Choice Award, Department of Industrial and Manufacturing Systems Engineering, Iowa State University (2023)
- (2) University Professor, Iowa State University (2020)
- (3) The Clifton A. Anderson Outstanding Faculty Award, Department of Industrial Engineering, North Carolina State University (2003)

## **RESEARCH ACTIVITIES**

ORCID: [0000-0002-6271-8064](https://orcid.org/0000-0002-6271-8064)

RESEARCHID: [D-8273-2012](https://researchid.org/D-8273-2012)

### **Publications in Peer-Reviewed Journals**

# - graduate student co-author; \* - undergraduate student co-author

#### **Journal Articles Accepted/ In Print**

- (1) Kim<sup>#</sup> J, SH Kang<sup>#</sup>, JF Li<sup>#</sup>, GA Mirka, and MC Dorneich (2024) “Effects of a Passive Back-Support Exosuit on Postural Control and Cognitive Performance During a Fatigue-Inducing Posture Maintenance Task”, *Human Factors*. (DOI:10.1177/00187208231221890).
- (2) Kang<sup>#</sup>, SH and GA Mirka (2024) “Cumulative Creep Response of Viscoelastic Lumbar Tissue as a Function of Work-Rest Schedule”, *Journal of Electromyography and Kinesiology* 78. (DOI:10.1016/j.jelekin.2024.102916)
- (3) Kang<sup>#</sup>, SH, L Lynch\*, E Wolf\* and GA Mirka (2024) “Quantifying the effectiveness of a passive trunk-support exosuit at reducing erector spinae muscle fatigue during a quasi-static posture maintenance task”, *Ergonomics*. (DOI:10.1080/00140139.2023.2295214).
- (4) Kang<sup>#</sup>, SH and GA Mirka (2024) “Effects of a Passive Back-Support Exosuit on Erector Spinae and Abdominal Muscle Activity during Asymmetric Trunk Posture Maintenance Tasks” *Human Factors*. (DOI:10.1177/00187208231197264).
- (5) Kang<sup>#</sup>, SH and GA Mirka (2023) “Creep Deformation of Viscoelastic Lumbar Tissues during Sustained Submaximal Trunk Flexion Postures” *Journal of Biomechanics*. (DOI:10.1016/j.jbiomech.2023.111647).
- (6) Kang<sup>#</sup>, SH and GA Mirka (2023) “Effect of Trunk Flexion Angle and Time on Lumbar and Abdominal Muscle Activity While Wearing a Passive Back-Support Exosuit Device During Simple Posture-Maintenance Tasks”, *Applied Ergonomics*. (DOI:10.1080/00140139.2023.2191908)
- (7) Norasi<sup>#</sup> H, J Drum, T Baldus and GA Mirka (2022) “Development of a Test Battery for Fatigue Assessment of Agriculture Seating Systems: A Laboratory and Field Study”, *Journal of Agromedicine*, 27(4): 346-358. (DOI:10.1080/1059924X.2021.2024469)
- (8) Norasi<sup>#</sup> H, J Koenig<sup>#</sup>, GA Mirka (2022) “Development and Assessment of a Method to Estimate Maximum Voluntary Contraction EMG from Submaximal EMG Data”, *Journal of Applied Biomechanics*, 38(2): 76-83. (DOI:10.1123/jab.2021-0229)
- (9) Norasi<sup>#</sup> H, E Tetteh<sup>#</sup>, P Sarker<sup>#</sup>, GA Mirka and MS Hallbeck (2022) “Exploring the Relationship between Neck Postural Exposure and Neck Problems: A Systematic Review of the Literature”, *Ergonomics*, 65(4): 587-603. (DOI:10.1080/00140139.2021.1976847)
- (10) Tetteh<sup>#</sup> E, MS Hallbeck, GA Mirka (2022) “Effects of Passive Exoskeleton Support on EMG Measures of the Neck, Shoulder and Trunk Muscles While Holding Simulated Surgical Postures and Performing a Simulated Surgical Procedure”, *Applied Ergonomics*, 100:103646 (DOI:10.1016/j.apergo.2021.103646).
- (11) Smyth\* C and GA Mirka (2021) “Impact of a Neck Strap Intervention on Discomfort, Force, and Muscle Activity of Clarinetists”, *Medical Problems of Performing Artists*, 36(4): 225-232. (DOI:10.21091/mppa.2021.4025)
- (12) Tetteh<sup>#</sup> E and GA Mirka (2021) “Trunk Kinematic Variability as a Function of Time During the Early Phase of a Repetitive Lifting Task”, *Human Factors and Ergonomics in the Manufacturing and Service Industries*, 31: 291–299. (DOI:10.1002/hfm.20888)
- (13) Sarker<sup>#</sup> P, H Norasi<sup>#</sup>, J Koenig\*, MS Hallbeck and GA Mirka (2021) “Effects of Break Scheduling Strategies on Subjective and Objective Measures of Neck and Shoulder Muscle Fatigue in Asymptomatic Adults Performing a Standing Task Requiring Static Neck Flexion”, *Applied Ergonomics*, 92: 103311. (DOI:10.1016/j.apergo.2020.103311)
- (14) Koenig\* J, H Norasi<sup>#</sup>, and GA Mirka (2021) “Technical Note: Using Johnson Distributions to Model Trunk Kinematics”, *Theoretical Issues in Ergonomics Science*, 22(5): 555-566. (DOI:10.1080/1463922X.2020.1836285)
- (15) Sarker<sup>#</sup> P and GA Mirka (2020) “The Effects of Repetitive Bouts of a Fatiguing Exertion (with Breaks) on the Slope of Median Frequency of the EMG Power Spectrum”, *Journal of Electromyography and Kinesiology*, 51: 102383. (DOI:10.1016/j.jelekin.2019.102382).
- (16) Tetteh<sup>#</sup> E, P Sarker<sup>#</sup>, C Radley<sup>#</sup>, MS Hallbeck and GA Mirka (2020) “Effect of Surgical Radiation Personal Protective Equipment on the Rate of Back and Shoulder Muscle Fatigue”, *Applied Ergonomics*, 84: 103029. (DOI:10.1016/j.apergo.2019.103029).
- (17) Norasi<sup>#</sup> H, J Koenig\* and GA Mirka (2019) “The Effects of Load Weight and Load Starting Height on Variability of Lifting Kinematics and Kinetics”, *International Journal of Industrial Ergonomics* 73: 102830. (DOI:10.1016/j.ergon.2019.102830).
- (18) Jin<sup>#</sup>, S, and GA Mirka (2017) “Combined Effect of Low Back Muscle Fatigue and Passive Tissue Elongation on the Flexion-Relaxation Response”, *Applied Ergonomics* 63: 72-78. (DOI:10.1016/j.apergo.2017.04.022).

- (19) Jin<sup>#</sup>, S, and GA Mirka (2015) “A Systems-Level Perspective of the Biomechanics of the Trunk Flexion-Extension Movement: Part I - Normal Low Back Condition”, *International Journal of Industrial Ergonomics* 46: 7-11. (DOI:10.1016/j.ergon.2015.01.008).
- (20) Jin<sup>#</sup>, S, and GA Mirka (2015) “A Systems-Level Perspective of the Biomechanics of the Trunk Flexion-Extension Movement: Part II – Fatigued Low Back Condition”, *International Journal of Industrial Ergonomics* 46: 1-6. (DOI:10.1016/j.ergon.2015.01.007).
- (21) Haddad<sup>#</sup> O, and GA Mirka (2013) “Trunk Muscle Fatigue and Its Implications in EMG-Assisted Biomechanical Modeling”, *International Journal of Industrial Ergonomics* 43: 425-429, (DOI:10.1016/j.ergon.2013.08.004).
- (22) Hall<sup>#</sup> M, ER Boyer<sup>#</sup>, JC Gillette, and GA Mirka (2013) “Medial Knee Joint Loading During Stair Ambulation and Walking While Carrying Loads”, *Gait & Posture* 37: 460-462, (DOI:10.1016/j.gaitpost.2012.08.008).
- (23) Ning<sup>#</sup> X, S Jin<sup>#</sup>, and GA Mirka (2012) “Describing the Active Region Boundary of EMG-Assisted Biomechanical Models of the Low Back”, *Clinical Biomechanics* 27: 422-427, (DOI:10.1016/j.clinbiomech.2011.11.003).
- (24) Jin<sup>#</sup> S, X Ning<sup>#</sup>, and GA Mirka (2012) “An Algorithm for Defining the Onset and Cessation of the Flexion-Relaxation Phenomenon in the Low Back Musculature”, *Journal of Electromyography and Kinesiology* 22: 376-382, (DOI:10.1016/j.jelekin.2012.01.003).
- (25) Mirka GA, X Ning<sup>#</sup>, S Jin<sup>#</sup>, O Haddad<sup>#</sup> and KL Kucera (2011) “Ergonomic Interventions for Commercial Crab Fishermen”, *International Journal of Industrial Ergonomics* 41: 481-487, (DOI:10.1016/j.ergon.2011.03.006).
- (26) Hageman<sup>#</sup> ER, M Hall<sup>#</sup>, EG Sterner<sup>#</sup> and GA Mirka (2011) “Longitudinal Arch Deformation during Walking and Stair Navigation while Carrying Loads”, *Foot & Ankle International* 32: 623-629, (DOI:10.3113/FAI.2011.0623).
- (27) Jin<sup>#</sup> S and GA Mirka (2011) “The Effect of a Lower Extremity Kinematic Constraint on Lifting Biomechanics”, *Applied Ergonomics* 42: 867-872, (DOI:10.1016/j.apergo.2011.02.003).
- (28) Ning<sup>#</sup> X, O Haddad<sup>#</sup>, S Jin<sup>#</sup> and GA Mirka (2011) “Influence of Asymmetry on the Flexion Relaxation Response of the Low Back Musculature”, *Clinical Biomechanics* 26: 35-39, (DOI:10.1016/j.clinbiomech.2010.08.012).
- (29) Sorensen<sup>#</sup> CJ, O Haddad<sup>#</sup>, S Campbell<sup>#</sup> and GA Mirka (2011) “The Effect of Stance Width on Trunk Kinematics and Trunk Kinetics during Sagittally Symmetric Lifting”, *International Journal of Industrial Ergonomics* 41: 147-152, (DOI:10.1016/j.ergon.2010.12.007).
- (30) Ning<sup>#</sup> X and GA Mirka (2010) “The Effect of Sinusoidal Rolling Ground Motion on Lifting Biomechanics”, *Applied Ergonomics* 42: 131-137, (DOI:10.1016/j.apergo.2010.06.001).
- (31) Haddad<sup>#</sup> O and GA Mirka (2010) “Hand-Hold Location and Trunk Kinematics during Box Handling”, *Ergonomics* 53: 1033-1038, (DOI:10.1080/00140139.2010.494458).
- (32) Dai<sup>#</sup> B, S Jin<sup>#</sup>, X Ning<sup>#</sup> and GA Mirka (2010) “The Effects of Horizontal Load Speed and Lifting Frequency on Lifting Technique and Biomechanics”, *Ergonomics* 53: 1024–1032, (DOI:0.1080/00140139.2010.493957).
- (33) Xu<sup>#</sup> X, SM Hsiang, and GA Mirka (2010) “An Empirical Validation of a Base-Excitation Model to Predict Harvestable Energy from a Suspended-Load Backpack System”, *Theoretical Issues in Ergonomics Science* 11: 546-560, (DOI:10.1080/14639220903373839).
- (34) Kucera<sup>#</sup> KL, D Loomis, HJ Lipscomb, SW Marshall, GA Mirka, and J Daniels (2009) “Ergonomic Risk Factors for Low Back Pain in North Carolina Crab Pot and Gill Net Commercial Fishermen”, *American Journal of Industrial Medicine* 52: 311-321, (DOI:10.1002/ajim.20676).
- (35) Anderson<sup>#</sup> A, GA Mirka, SMB Joines<sup>#</sup>, and DB Kaber (2009) “Analysis of Alternative Keyboards Using Learning Curves”, *Human Factors* 51: 35-45, (DOI:10.1177/0018720808329844).
- (36) Jin<sup>#</sup> S, RS McCulloch<sup>#</sup> and GA Mirka (2009) “Biomechanical Evaluation of Postures Assumed When Harvesting from Bush Crops”, *International Journal of Industrial Ergonomics* 39: 347-352, (DOI:10.1016/j.ergon.2008.07.005).
- (37) Xu<sup>#</sup> X, SM Hsiang, and GA Mirka (2009) “The Effect of a Suspended-Load Backpack on Gait”, *Gait & Posture* 29: 151-153, (DOI:10.1016/j.gaitpost.2008.06.008).
- (38) Noack<sup>#</sup> K, CM Sommerich and GA Mirka (2009) “College Students and Computers: Profile of Use and Musculoskeletal Discomfort”, *Work* 32: 285-298, (DOI:10.3233/WOR-2009-0827).
- (39) Mirka GA, S Jin<sup>#</sup>, and J Hoyle (2009) “An Evaluation of Arborist Handsaws”, *Applied Ergonomics* 40: 8-14, (DOI:10.1016/j.apergo.2008.02.011).
- (40) Xu<sup>#</sup> X, SM Hsiang and GA Mirka (2008) “Coordination Indices between Lifting Kinematics and Kinetics”, *International Journal of Industrial Ergonomics* 38(11): 1062-1066, (DOI:10.1016/j.ergon.2008.02.008).
- (41) Kucera<sup>#</sup> KL, GA Mirka, D Loomis, SW Marshall, HJ Lipscomb, and J Daniels (2008) “Evaluating Ergonomic Stresses in North Carolina Commercial Crab Pot and Gill Net Fishermen”, *Journal of Occupational & Environmental Hygiene* 5: 182-196, (DOI:10.1080/15459620701873514).

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- (43) Anderson<sup>#</sup> AP, KA Meador<sup>#</sup>, LR McClure<sup>#</sup>, D Makrozahopoulos<sup>#</sup>, DJ Brooks<sup>#</sup> and GA Mirka (2007) “A Biomechanical Analysis of Anterior Load Carriage”, *Ergonomics* 50: 2104-2117, (DOI:10.1080/00140130701450195).
- (44) Shu<sup>#</sup> Y, Z Jiang<sup>#</sup>, X Xu<sup>#</sup>, and GA Mirka (2007) “The Effect of a Knee Support on the Biomechanical Response of the Low Back”, *Journal of Applied Biomechanics* 23: 275-281.
- (45) Shin<sup>#</sup> G, and GA Mirka (2007) “An In-Vivo Assessment of the Low Back Response to Prolonged Flexion: Interplay Between Active and Passive Tissues”, *Clinical Biomechanics* 22: 965-971, (DOI:10.1016/j.clinbiomech.2007.06.003).
- (46) Reid<sup>#</sup> SA, and GA Mirka (2007) “Learning Curve Analysis of a Patient Lift-Assist Device”, *Applied Ergonomics* 38: 765-771, (DOI:10.1016/j.apergo.2006.10.006).
- (47) Southard<sup>#</sup> SA and GA Mirka (2007) “An Evaluation of Backpack Harness Systems in Non-Neutral Torso Postures”, *Applied Ergonomics* 38: 541-547, (DOI:10.1016/j.apergo.2006.08.007).
- (48) Southard<sup>#</sup> SA, JH Freeman<sup>#</sup>, JE Drum<sup>#</sup> and GA Mirka (2007) “Ergonomic Interventions for the Reduction of Back and Shoulder Biomechanical Loading when Weighing Calves”, *International Journal of Industrial Ergonomics* 37: 103-110, (DOI:10.1016/j.ergon.2006.10.016).
- (49) Shu<sup>#</sup> Y and GA Mirka (2006) “A Laboratory Study of the Effects of Wrist Splint Orthoses on Forearm Muscle Activity and Upper Extremity Posture”, *Human Factors* 48: 499-510, (DOI:10.1518/001872006778606859).
- (50) Jiang<sup>#</sup> ZL, Y Shu<sup>#</sup>, J Drum<sup>#</sup>, S Reid<sup>#</sup>, and GA Mirka (2006) “Effects of Age on Muscle Activity and Upper Body Kinematics during a Repetitive Forearm Supination Task”, *International Journal of Industrial Ergonomics* 36: 951-957, (DOI:10.1016/j.ergon.2006.07.008).
- (51) Shin<sup>#</sup> G, M Nance<sup>\*</sup> and GA Mirka (2006) “Differences in Trunk Kinematics and Ground Reaction Forces between Older and Younger Adults during Lifting”, *International Journal of Industrial Ergonomics* 36: 767-772, (DOI:10.1016/j.ergon.2006.05.008).
- (52) Joines<sup>#</sup> SMB, CM Sommerich, GA Mirka, JR Wilson and SD Moon (2006) “Low-Level Exertions of the Neck Musculature: A Study of Research Methods”, *Journal of Electromyography and Kinesiology* 16: 485-497, (DOI:10.1016/j.jelekin.2005.09.007).
- (53) Bajaj<sup>#</sup> K, GA Mirka, CM Sommerich, and H Khachatorian (2006) “Evaluation of a Redesigned Self-Checkout Station for Wheelchair Users”, *Assistive Technology* 18: 15-24.
- (54) Lawrence<sup>#</sup> BM, GD Buckner and GA Mirka (2006) “An Adaptive System Identification Model of the Biomechanical Response of the Human Trunk during Sudden Loading”, *Journal of Biomechanical Engineering* 128(2): 235-241, (DOI:10.1115/1.2165696).
- (55) Brandenburg<sup>#</sup> DL and GA Mirka (2005) “Assessing the Effects of Positive Feedback and Reinforcement in the Introduction Phase of an Ergonomic Intervention”, *Human Factors* 47: 526-535, (DOI:10.1518/001872005774860078).
- (56) Lawrence<sup>#</sup> BM, GA Mirka and GD Buckner (2005) “Adaptive System Identification Applied to the Biomechanical Response of the Human Trunk During Sudden Loading”, *Journal of Biomechanics* 38: 2472-2479, (DOI:10.1016/j.jbiomech.2004.09.038).
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- (60) Sudhakaran<sup>#</sup> S and GA Mirka (2005) “A Laboratory Investigation of Personality Type and Break-Taking Behavior”, *International Journal of Industrial Ergonomics* 35: 237-246, (DOI:10.1016/j.ergon.2004.09.003).
- (61) Mirka GA, G Shin<sup>#</sup>, K Kucera<sup>#</sup> and D Loomis (2005) “Use of the CABS Methodology to Assess Biomechanical Stress in Commercial Crab Fishermen”, *Applied Ergonomics* 36: 61-70, (DOI:10.1016/j.apergo.2004.08.001).
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- (63) Shin<sup>#</sup> G, Y Shu<sup>#</sup>, Z Li<sup>#</sup>, Z Jiang<sup>#</sup> and GA Mirka (2004) “Influence of Knee Angle and Individual Flexibility on the Flexion-Relaxation Response of the Low Back Musculature”, *Journal of Electromyography and Kinesiology* 14: 485-494, (DOI:10.1016/j.jelekin.2003.12.001).
- (64) Shin<sup>#</sup> G and GA Mirka (2004) “The Effects of a Sloped Ground Surface on Trunk Kinematics and L5/S1 Moment during Lifting”, *Ergonomics* 47: 646-659, (DOI:10.1080/00140130310001653066).
- (65) Leyman<sup>#</sup> ELC, DB Kaber, GA Mirka and CM Sommerich (2004) “Cervicobrachial Muscle Response to Cognitive Load in a Dual-Task Scenario”, *Ergonomics* 47: 625-645, (DOI:10.1080/00140130310001629766).

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- (88) Mirka GA and WS Marras (1990) “Lumbar Motion Response to a Constant Load Velocity Lift”, *Human Factors* 32: 493-501.
- (89) Marras WS and GA Mirka (1990) “Muscle Activities during Asymmetric Trunk Angular Accelerations”, *Journal of Orthopaedic Research* 8: 824-832.
- (90) Marras WS and GA Mirka (1989) “Trunk Strength During Asymmetric Trunk Motion”, *Human Factors* 31: 667-677.

- (91) Lavender SA, GA Mirka, RW Schoenmarklin, CM Sommerich, LR Sudhakar and WS Marras (1989) “The Effects of Preview and Task Symmetry on Trunk Muscle Response to Sudden Loading”, *Human Factors* 31: 101-115.

#### **Journal Articles In Revision/Review/Development**

- (1) Kang<sup>#</sup>, SH. E Wolf<sup>\*</sup>, L Lowe<sup>\*</sup>, and GA Mirka (In Review) “The Effects of a Passive Lumbar Exoskeleton on Low Back Muscle Fatigue During a Simulated Harvesting Task”, Submitted to Journal of Agromedicine.
- (2) Kang<sup>#</sup>, SH. and GA Mirka (In Preparation) “Load Transfer Between Active and Passive Lumbar Tissues and Its Implications in Time-Dependent EMG-Assisted Biomechanical Modeling” To be submitted to Journal of Biomechanics.
- (3) Kang<sup>#</sup>, SH. and GA Mirka (In Preparation) “Effects of Trunk Flexion Posture and Stress-Recovery Schedule on Creep Deformation of the Viscoelastic Lumbar Tissues” To be submitted to *Ergonomics*.
- (4) Kang<sup>#</sup>, SH. and GA Mirka (In Preparation) “Creep Deformation of Viscoelastic Lumbar Tissue and Its Implications in Biomechanical Modeling of the Lumbar Spine” To be submitted to *Journal of Biomechanics*.

### **Technology Transfer**

#### **Patents**

- (1) Patent No. US 5,012,819 A – Apparatus for monitoring the motion components of the lumbar spine. Co-Inventor with Marras, Miller and Davis.
- (2) Patent No. US 5,094,249 A – Apparatus for monitoring the motion of the lumbar spine. Co-Inventor with Marras, Miller and Davis.
- (3) Patent No. US 5,143,088 A – Apparatus for monitoring the motion components of the lumbar spine. Co-Inventor with Marras, Miller and Davis.

#### **Patent Disclosures**

- (1) Height Adjustable Upholstery Buck System - The Height Adjustable Upholstery Buck System is a system designed to eliminate the heavy lifting and reduce the static awkward postures associated with the task of upholstering furniture. Disclosed (1/2000)
- (2) Ergonomic Interface for a Random Orbital Sander - The Ergonomic Interface for a Random Orbital Sander is a device designed to eliminate the static grip forces required to operate a random orbital sander and to reduce the exposure to the vibration of the tool. Disclosed (1/2000)
- (3) Pneumatic Wall Lift - The Pneumatic Wall Lift is a device that greatly reduces the lifting force required to erect fully constructed walls in the home building industry. Disclosed (1/2000)
- (4) Ergonomic Upholstery Fabric Pulling Tool - The Ergonomic Upholstery Fabric Pulling Tool is a device that is designed to replace the harmful, repetitive pinch grips used by workers in the upholstered furniture manufacturing industry. Disclosed (1/2000)
- (5) Crab Boat Lift Assist Device – The crab boat lift assist device is a system developed to reduce the stress on the low backs and shoulders of commercial fishermen. The device helps to pull crab pots from the water and supports the weight of the pot as the crabs are removed. Disclosed (9/2009)

#### **Software**

- (1) Mirka, GA: "A Computerized NIOSH Lifting Guide Model Developed for the Furniture Manufacturing Industry" developed for the furniture manufacturing industry through a grant from the Furniture Manufacturing and Management Center.

## INSTRUCTIONAL ACTIVITIES

### Publications

- (1) Miller, T., Mirka, G., Gloster, C., Holder, T., Alderman, C., Brawner, C., Rettinger, L., Hewitt, K., and Crawley, T., (1998), "MBone Virtual Classroom for Engineering Distance Education", International Conference on Engineering Education, August 17-20 - Rio Othon Palace - Rio de Janeiro.

### NCSU Courses Taught (and student evaluations Scale: 1-Poor – 5-Superior)

IE 352 Work Analysis and Design:	Course Rating: 4.3/5.0; Instructor Rating 4.5/5.0 (N=9 offerings)
IE 452 Ergonomics:	Course Rating: 3.8/5.0; Instructor Rating 4.3/5.0 (N=2 offerings)
IE 543 Musculoskeletal Mechanics:	Course Rating: 4.3/5.0; Instructor Rating 4.5/5.0 (N=4 offerings)
IE 544 Occupational Biomechanics:	Course Rating: 4.2/5.0; Instructor Rating 4.5/5.0 (N=10 offerings)
IE 767 Upper Extremity Biomechanics:	Course Rating: 4.0/5.0; Instructor Rating 4.5/5.0 (N=1 offering)
IE 768 Spine Biomechanics:	Course Rating: 4.5/5.0; Instructor Rating 4.7/5.0 (N=2 offerings)
IE 796 Research Practicum:	Course Rating: 4.5/5.0; Instructor Rating 4.7/5.0 (N=8 offerings)

**Overall Department Averages in Period: Course Rating: 3.7/5.0; Instructor Rating 3.9/5.0**

### ISU Courses Taught (and student evaluations Scale: 1-Poor – 5-Superior)

IE 271 Applied Ergonomics and Work (SP 2008-10, 2017-24)	Instructor Rating 4.5/5.0 (N=9 offerings)
IE 501 Graduate Seminar (AU/SP 2007,08,2016-24)	Instructor Rating N/A (N=19 offerings)
IE 571 Occupational Biomechanics (AU 2008,10,17,18,23,24)	Instructor Rating 4.9/5.0 (N=6 offerings)
IE 671 Research Pract in Ergonomics (SP 2009,10,18,19,23)	Instructor Rating 4.6/5.0 (N=4 offerings)
IE 673 Spine Biomechanics (AU 2009,18,22)	Instructor Rating 5.0/5.0 (N=3 offerings)
GR ST 565 Responsible Conduct of Research (SP 2012-17)	Instructor Rating N/A (N=6 offerings)

**Overall Department Averages in Period: Instructor Rating 4.2/5.0**

### PhD Committees (Chair/Co-Chair)

- (1) Joseph Davis, PhD IE (NCSU), A transverse contour model of distributed muscle forces and spinal loads during lifting and twisting, 1997, Chair. **Current Position: Engineer & Project Manager at Engineering Economics Inc. – Raleigh, NC.**
- (2) Brad Lawrence, PhD IE (NCSU), Intelligent system identification applied to the biomechanical response of the human trunk during sudden loading, 2002, Co-Chair with Dr. Greg Buckner (Mechanical Engineering). **Current Position: Senior Engineering and Product Development, Advanced Micro Devices (AMD); Lecturer, School of information, University of Texas at Austin.**
- (3) Naomi Glasscock, PhD IE (NCSU), Exploring the relationships between psychosocial factors, biomechanical workstyle, muscle tension, and musculoskeletal discomfort reporting, 2003, Co-Chair with Dr. Katherine Klein (Psychology). **Current Position: Associate Director of Prescription Drug Monitoring Program (PDMP) Associate Director of Prescription Drug Monitoring Program (PDMP) - Veterans Health Administration (VHA).**
- (4) Gwanseob Shin, PhD IE (NCSU), Viscoelastic responses of the lumbar spine during prolonged stooping, 2005, Co-Chair with Dr. Elizabeth Lobo (Biomedical Engineering). **Current Position: Professor and Department Chair – Ulsan National Institute of Science and Technology (Korea).**
- (5) Dan Kelaher, PhD IE (NCSU), Effects of trunk extensor muscle fatigue on trunk proprioception and biomechanics, 2006, Chair. **Current Position: Human Factors Engineer – Lenovo.**
- (6) Yu Shu, PhD IE (NCSU), Biomechanical analysis of eccentric and concentric lifting exertions, 2007, Chair. **Current Position: Unknown.**
- (7) Zongliang Jiang, PhD IE (NCSU), Application of an entropy-assisted optimization model in prediction of agonist and antagonist muscle forces, 2007, Co-Chair with Dr. Shu-Cherng Fang (Operations Research). **Current Position: Unknown.**
- (8) Sangeun Jin, PhD IE (ISU), A systems-level perspective of the flexion-relaxation phenomenon in the lumbar spine, 2011, Chair. **Current Position: Professor and Department Chair - Pusan National University (Korea).**
- (9) Xiaopeng Ning, PhD IE (ISU), Development of a new work-rest scheduling model based on inventory control theory, 2011, Chair. **Current Position: Unknown.**
- (10) Omid Haddad, PhD IE (ISU), Development and validation of a fatigue-modified, EMG-assisted biomechanical model of the lumbar region, 2011, Chair. **Current Position: Adjunct Assistant Professor – Sharif University.**

- (11) Hamid Norasi, PhD IE (ISU), A systems-level evaluation of the biomechanical response of the cervical spine to sagittal plane flexion, 2020, Co-chair with Susan Hallbeck. **Current Position: Post-Doctoral Research Associate – Mayo Clinic.**
- (12) Emmanuel Tetteh, PhD IE (ISU), Using biomechanical data to explore the utility of exoskeleton intervention for work-related musculoskeletal disorders in the surgeons, 2021, Co-chair with Susan Hallbeck. **Current Position: Senior Human Factors Consultant – Carilion Clinic.**
- (13) Pramiti Sarker, PhD IE (ISU), Use of inventory control theory and multi-objective optimization to model work-rest scheduling, 2022, Co-chair with Susan Hallbeck. **Current Position: Assistant Teaching Professor – Purdue University.**
- (14) Sang Hyeon Kang, PhD IE (ISU), Creep deformation of viscoelastic lumbar tissue and its implications in biomechanical modeling of the lumbar spine, 2024, Co-chair with Susan Hallbeck. **Current Position: Assistant Professor – Western Michigan University.**

#### **PhD Committees (Member)**

- (1) Tom Brugler, PhD Psychology (NCSU), Intersensory form perception involving touch and vision: three tests of rock's unitary processing hypothesis, 1993.
- (2) Sharon Joines, PhD IE (NCSU), Using surface electromyography to study cervical extensor muscle activity : an investigation of methodological considerations and the effects of age on fatigue development and recovery, 2001.
- (3) Susan Kahler, PhD Psychology (NCSU), A comparison of knowledge acquisition methods for the elicitation of procedural mental models, 2002.
- (4) Melanie Wright, PhD IE (NCSU), The effects of automation on team performance and team coordination, 2002.
- (5) Kristen Kucera, PhD Epidemiology (UNC-CH), Quantifying ergonomics stresses in North Carolina commercial crab pot fishermen and gill net fishermen, 2005.
- (6) Ruiqi Ma, PhD IE (NCSU), The effects of in-vehicle automation and reliability on driver situation awareness and trust, 2005.
- (7) Noa Segall, PhD IE (NCSU), Design and prototyping of a cognitive model-based decision support tool of anesthesia provider management of crisis situations, 2006.
- (8) Mohamed Sheiknainar, PhD IE (NCSU), Development and empirical assessment of a model of situation awareness for multitasking with locomotion, 2007.
- (9) Xu Xu, PhD IE (NCSU), Investigation of Interactivity between Suspended-load Backpack and Human Gait, 2008.
- (10) Beth Hanna, PhD Apparel, Educational Studies, & Hospitality Management (ISU), Assessment of Middle-Sized School Food Management Policies, 2008.
- (11) Kate Stafford, PhD Kinesiology (ISU), Biomechanical and Neuromuscular Changes in Jump Landings Due To Short or Long Term Ankle Bracing and Fatigue, 2012.
- (12) Carlos Lopez, PhD Educational Leadership and Policy Studies (ISU), Transfer Students in STEM majors at a Midwestern University: Academic and social involvement factors that influence student's success upon transfer, 2012.
- (13) Harsh Buddhadev, PhD Kinesiology (ISU), Age-associated redistribution of relative joint power during submaximal steady-state cycling, 2015.
- (14) Junsig Wang, PhD Kinesiology (ISU), L5/S1 joint moment over different loading conditions during stair negotiation, 2016.
- (15) Davood Hajinezhad, PhD IE (ISU), Distributed nonconvex optimization: Algorithms and convergence analysis, 2017.
- (16) Jeffrey McClellan, PhD Kinesiology (ISU), The effects of running speed, form, and fatigue on intervertebral disc pressures at L5/S1: A developmental musculoskeletal and finite element modeling approach, 2018.
- (17) Mitchell Stephenson, PhD Kinesiology (ISU), Perception and action coupling in the lower extremity control during jump landings, 2019.
- (18) Jeff Mettler, PhD Kinesiology (ISU), Strain estimations of the plantar fascia and other ligaments of the foot: Implications for plantar fasciitis, 2021.
- (19) Coltan Fales, PhD Kinesiology (ISU), Accelerations of Trunk and Limb Assessment System (ALTAS): A Monte-Carlo simulation approach to dynamic work evaluation for the agricultural sector, 2021.
- (20) Shekoofe Saadat, PhD Kinesiology (ISU), Biomechanical and neurocognitive risk factors associated with anterior cruciate ligament injuries, 2022.
- (21) Yanhua Wang, PhD IE (ISU), Hydroponic system customization and Internet of things integration for operation optimization and physiology study, 2023



- (22) Zhonglun Wang, PhD IE (ISU), Comprehensive hand and power tool evaluation for comprehensive knowledge & expected returns (CHECKER): a novel method for maximizing returns in industrial tool selection, 2024.
- (23) Madeline Jenkins, PhD Kinesiology (ISU), In Progress.
- (24) Jinfeng Li, PhD Kinesiology (ISU), In Progress.
- (25) Holly Schmitz, PhD Kinesiology (ISU), In Progress.

### **MS-Thesis Committees (Chair)**

- (1) Angela Harrison, MS IE (NCSU), An evaluation of the dynamics of lifting under various lifting conditions, 1994.
- (2) Ann Baker, MS IE (NCSU), Effects of acceleration on the relationship between electromyographic activity and muscle force during elbow flexion, 1995.
- (3) Dan Kelaher, MS IE (NCSU), Substitution patterns of the quadriceps muscles before and after fatiguing isokinetic knee extensions, 1996.
- (4) Carrie Shivers, MS IE (NCSU), Effect of grip span on lateral pinch grip strength, 2001.
- (5) Kelly Duke, MS IE (NCSU), Productivity and ergonomic investigation of bent-handle pliers, 2002.
- (6) Todd Nay, MS IE (NCSU), Predicting trunk kinematics from static task parameters, 2002.
- (7) Gwanseob Shin, MS IE (NCSU), The effects of sloped ground on the hip, knee, and ankle joint kinetics and kinematics during lifting tasks, 2002.
- (8) David Brandenburg, MS IE (NCSU), Assessing the effects of positive feedback and reinforcement throughout the implementation phase of an ergonomic intervention, 2002.
- (9) Sunil Sudhakaran, MS IE (NCSU), Effect of personality type on performance of an overhead task, 2003.
- (10) Elizabeth Covalla, MS IE (NCSU), Visual posture observation error and training, 2003.
- (11) Komal Bajaj, MS IE (NCSU), Redesign and evaluation of the grocery store self-checkout systems from universal design perspectives, 2003.
- (12) Karen Noack, MS IE (NCSU), College student computer use and ergonomics, 2003.
- (13) Jonathan Drum, MS IE (NCSU), An investigation of the effects of fatigue and stance width on horizontal ground reaction forces and trunk kinematics, 2005.
- (14) Yu Shu, MS IE (NCSU), Effect of wrist splint orthoses on forearm muscle activity and upper extremity kinematics, 2005.
- (15) Jacklyn Freeman, MS IE (NCSU), An investigation of the variability in the lifting technique of older workers versus younger workers, 2005.
- (16) Stephanie Southard, MS IE (NCSU), Evaluating a new design for the NASA SCAPE harness, 2005.
- (17) Stephanie Reid, MS IE (NCSU), Learning curve analysis of a patient lift assist device, 2005.
- (18) Xu Xu, MS IE (NCSU), The effect of obesity on trunk kinematics and ground reaction forces during lifting, 2006.
- (19) Leigh McClure, MS IE (NCSU), Effects of time of day and warm-up on lifting kinematics, 2007.
- (20) Allison Anderson, MS IE (NCSU), Learning curve analysis for alternative keyboards, 2007.
- (21) Kristen Meador, MS IE (NCSU), Ergonomic interventions for an ultrasound transducer, 2007.
- (22) Steven Kryk, MS IE (ISU), Evaluation of decision support system for order picking warehouse design, 2019.
- (23) Jordyn Koenig, MS IE (ISU) (Co-chair with Susan Hallbeck) Assessing the Utility of Exoskeleton Technologies in Sonography, 2020. Recipient of and NSF Graduate Research Fellowship (NSF-GRF).

### **MS Committees (Member)**

- (1) Sharon Joines, MS IE (NCSU), Evaluating the risk of developing carpal tunnel syndrome: Part I - comparing the effectiveness of four ergonomic risk assessment techniques; Part II - an application of continuous simulation for ergonomic intervention assessment, 1996.
- (2) Jim Martin, MS IE (NCSU), The prioritization of multiple warnings and variability in warning instruction interpretation among industrial machine operators, 1997.
- (3) Jennifer Dikeman, MS BAE (NCSU), Experimental simulation of mechanism of injury for non-contact, isolated anterior cruciate ligament ruptures, 1998.
- (4) Jennie Psihogios, MS IE (NCSU), The effects of VDT placement on user posture and comfort: a field study, 1998.
- (5) Stephanie Hayden, MS NE (NCSU), Determination of partial volume and spillover effects in noninvasive measurement of arterial input functions using Positron Emission Tomography, 1999.
- (6) Mike Monroe, MS IE (NCSU), The influence of head, forearm and back support on myoelectric activity: performance/comfort during a VDT task, 2000.

- (7) Aaron Stewart, MS IE (NCSU), Human modeling and simulation: establishing parameters for an adjustable notebook computer display, 2000.
- (8) Christy Smith, MS IE (NCSU), The use of ergonomic interventions in dental hygiene work, 2000.
- (9) Danelle Eastham, MS CE (NCSU), Advancing ergonomics and productivity in masonry construction, 2001.
- (10) Heather Warren, MS IE (NCSU), Auditory cueing effects on human performance with an adaptive system, 2002.
- (11) Amanda Marley, MS BAE (NCSU), The mechanics of greater trochanter osteotomy stabilization with the use of the Dall-Miles Cable Grip System, 2002.
- (12) Jennifer Lossing, MS BME (NCSU), Quantification of chondrocyte death and proteoglycan content in mechanically impacted articular cartilage, 2004.
- (13) Sabrina Lamar, MS IE (NCSU), Investigation of factors associated with prevalence and severity of musculoskeletal symptoms among the workers in clinical specialties of radiologic technology, 2004.
- (14) Lashanda Lee, MS IE (NCSU), Assessing interactive system effectiveness with usability design heuristics and Markov models of user behavior, 2007.
- (15) Sangeun Jin, MS IE (NCSU), The effect of driver cognitive abilities and distraction on situation awareness and performance under hazard conditions, 2008.
- (16) Boyi Dai, MS Kinesiology (ISU), The effects of detraining on knee biomechanics in a stop-jump task: Implications for ACL injury, 2009.
- (17) Samuel Campbell, MS Kinesiology (ISU), The effect of step width on iliotibial band syndrome, 2009.
- (18) Chris Sorensen, MS Kinesiology (ISU), Biomechanical changes to the trunk and lower extremities during variations of the forward lunge exercise, 2009.
- (19) Minglu Wang, MS IE (ISU) TRUST, situation awareness and automation use: Exploring the effect of visual system degradation on human perceptions and performances in human-telerobot system, 2010.
- (20) Chen-Shuang Wei, MS IE (ISU), The impact of inspector classification on performance in various visual inspection display tasks, 2010.
- (21) Michelle Hall, MS Kinesiology (ISU), Biomechanical and neuromuscular adaptations in those with anterior cruciate ligament reconstruction during functional movements, 2010.
- (22) Elizabeth Hageman, MS Kinesiology (ISU), Medial longitudinal arch mechanics before and after a prolonged run, 2010.
- (23) Hong Yul Jun, MS IE (ISU), The effect of composite vs. first person perspective view in real world Tele-robotic operations, 2010.
- (24) Eric Sterner, MS Kinesiology (ISU), The effect of shoe forefoot stiffness on the windlass mechanism in running, 2011.
- (25) Zach Sobczak, MS IE (ISU), The ergonomic design of pull-tabs for the elderly and others with limited upper extremity function, 2012.
- (26) Sicong Chen, MS IE (ISU), The effect of table tennis racket design on wrist motion, 2013.
- (27) Tami Janssen, MS Kinesiology (ISU), Loading of the lower extremity and low back when using wedge orthotics during walking and stair negotiation, 2013.
- (28) Evan Day, MS Kinesiology (ISU), Effect of wedged shoe inserts on iliotibial band strain, 2015.
- (29) Caleb Radley, MS Kinesiology (ISU), The effects of predisposition on ankle sprain risk predictive factors during jump landing, 2018.
- (30) Varun Ananthasivan Srikrishnan, MS IE (ISU), A user-centered engineering approach to storage and access in high priority scenarios, In Progress.
- (31) Laura Stacy, MS Kinesiology (ISU), Evaluating the effects of external load, incline and walking speed on iliotibial band strain in wildland firefighters, 2019.
- (32) Steven Kryk, MS IE (ISU), Demonstration of the value of a graphics-based decision support system for order picking warehouse design, 2020.
- (33) Drew Schweiger, MS IE (ISU), Improving performance in an office environment via training the non-dominant hand on the computer mouse: A study of learning curve of the non-dominant hand and the bilateral transfer effect to the dominant hand, 2020.
- (34) Katherine Bricarell, MS Kinesiology (ISU), Evaluating the effects of external load, incline and walking speed on iliotibial band strain in wildland firefighters, 2022.
- (35) Joshua Riesenber, MS Kinesiology (ISU), The Effectiveness of Neck, Shoulder, and Back Exoskeletons on the Risk for Musculoskeletal Disorders in the Dental Industry, 2024.

## **PROFESSIONAL AND UNIVERSITY SERVICE**

### **Active Professional Society Memberships**

- (1) The Ergonomics Society (Fellow-2009)
- (2) Human Factors and Ergonomics Society
- (3) Institute of Industrial & Systems Engineers
- (4) American Society of Engineering Education

### **Previous Professional Society Memberships**

- (1) American Society of Biomechanics
- (2) American Society of Safety Engineers

### **Federal Study Section Activities**

- (1) National Institute for Occupational Safety and Health (NIOSH) Safety and Occupational Health (SOH) Study Section Regular Member: (2001-2004).
- (2) National Aeronautics and Space Administration (NASA) Space Human Factors Engineering - Technical Working Group (SHFE TWG): (2003-2006).
- (3) NASA Space Human Factors Engineering – Discipline Integrated Product Team: (2009).
- (4) NIOSH Training Grant Reviewer: (2004-2006).
- (5) NIOSH Small Business Innovation Research Grant (SBIR) Study Section Temporary Member: (2001-2008).
- (6) National Institutes of Health (NIH) Musculoskeletal Rehabilitation Sciences Study Section Temporary Member: (1999-2001).
- (7) NIH Musculoskeletal, Oral, Skin Sciences Study Section Temporary Member: (1999-2001).
- (8) NIH SBIR Study Section Temporary Member: (2004).
- (9) National Science Foundation (NSF) Occasional Reviewer: (2003).
- (10) NIOSH SOH Study Section Temporary Member: (1999-2001; 2004-2008; 2014-Present).
- (11) National Institute of Environmental Health Sciences (NIEHS) Study Section Temporary Member: (2006).

### **Editorial Activities**

#### **Associate Editorships**

- (1) *Human Factors* (2009-2012)
- (2) *Applied Ergonomics* (2016-2018)

#### **Editorial Board Memberships**

- (1) *Human Factors* (1997-2000; 2005-2009; 2012-Present)
- (2) *International Journal of Industrial Ergonomics* (2003-Present)
- (3) *Ergonomics* (2007-Present)
- (4) *IIE Transactions on Occupational Ergonomics and Human Factors* (2011-Present)
- (5) *Human Factors and Ergonomics in Manufacturing and Service Industries* (2015-Present)
- (6) *Journal of Electromyography and Kinesiology* (2000-2019)
- (7) *Habitation* (2004-2006)

#### **Occasional Referee**

- (1) *Journal of Biomechanics*
- (2) *Journal of Biomechanical Engineering*
- (3) *Applied Ergonomics*
- (4) *IIE Transactions*
- (5) *Clinical Biomechanics*
- (6) *Applied Occupational and Environmental Hygiene*
- (7) *IEEE Journal of Biological Engineering and Health Informatics*
- (8) *International Journal of Occupational Safety and Ergonomics*
- (9) *American Industrial Hygiene Association Journal*
- (10) *Theoretical Issues in Ergonomics Science*
- (11) *ASCE Journal of Construction Engineering and Management*
- (12) *Medical & Biological Engineering & Computing*
- (13) *Applied Bionics and Biomechanics*
- (14) *IIE Transactions on Occupational Ergonomics and Human Factors*
- (15) *Computers & Industrial Engineering*

- (16) *Computer Methods in Biomechanics and Biomedical Engineering*
- (17) *Gait and Posture*
- (18) *Journal of Applied Biomechanics*
- (19) *Perceptual and Motor Skills*
- (20) *Journal of Agricultural Safety and Health*
- (21) *Human Factors and Ergonomics in Manufacturing*
- (22) *Medicine & Science in Sports & Exercise*
- (23) *Journal of Healthcare Engineering*
- (24) *Biosystems Engineering*
- (25) *Human Factors and Ergonomics in Manufacturing & Service Industries*
- (26) *Safety and Health at Work*
- (27) *Frontiers in Neuroscience*
- (28) *Computers in Biology and Medicine*

#### **Professional Conference Activities**

- (1) Program Chair: Industrial Ergonomics Technical Group of the Human Factors and Ergonomics Society/International Ergonomics Association Year 2000 Conference, 175 papers reviewed, San Diego CA.
- (2) Program Committee (Human Factors) for the Industrial Engineering Research Conference (IERC 2004), 75 papers reviewed, Houston, TX, (2004).

#### **Academic Service/Administrative Activities**

##### **North Carolina State University**

##### **University**

- (1) Chair, NCSU Institutional Review Board (IRB) for the Use of Human Subjects in Research (1997-2000)
- (2) Member, NCSU IRB for the Use of Human Subjects in Research (1995-1997; 2000-2001)

##### **College of Engineering**

- (1) NCSU College of Engineering Space and Renovation Committee (2001-2005)
- (2) Industrial Engineering Coordinator for the NCSU College of Engineering Open House (1995-1998)

##### **Department of Industrial and Systems Engineering**

- (1) Director of Graduate Programs (2005-2007)
- (2) Graduate Admissions Committee (1997-2007)
- (3) Department Head Search Committee (1998)
- (4) Chair, Faculty Search Committees (1996; 2000; 2003; 2004; 2005)

##### **Iowa State University**

##### **University**

- (1) ISU Graduate Curriculum and Catalog Committee – Chair (2024-Present)
- (2) ISU Graduate Faculty Cabinet – Member (2024-Present)
- (3) ISU Faculty Senate Curriculum Committee – Member (2024-Present)
- (4) ISU Residency Review Committee – Member (2013-Present); Chair (2014-Present)
- (5) ISU University Professor Nomination Review Committee (2023-Present)
- (6) ISU Athletics Council – Member (2016-2022); Chair of Academic Performance Committee (2017-2022)
- (7) ISU University Response Team (COVID19) – Member (2020-2022)
- (8) ISU Orientation Committee – Chair (2012-2020)
- (9) ISU Howard Hughes Medical Institute Project – Advisory Board Member (2014-2018)
- (10) ISU Leadership Studies Program – Advisory Board Member (2011-2019)
- (11) ISU Human-Computer Interaction Advisory Committee (2017-2019)
- (12) ISU English Proficiency Evaluation Committee – Member (2014-2016)
- (13) ISU Undergraduate Programs Council – Member (2011-2016)
- (14) ISU Computer Curriculum Coordinating Committee – Member (2011-2016)
- (15) ISU Entrepreneurship Supervisory Committee College of Business – Member (2011-2016)
- (16) ISU Associate Deans for Academic Personnel – Member (2012-2016)
- (17) ISU Teaching Awards Selection Committee – Member (2012-2016)

- (18) ISU Transportation Advisory Committee – Member (2013-2016)
- (19) ISU Data Sciences Academic Coordinating Group – Co-Chair with Arne Hallam (2015-2016)
- (20) ISU Associate Deans for Graduate Programs – Member (2011-2015)
- (21) ISU Writing and Media Center Advisory Board – Member (2012-2015)
- (22) ISU Presidential Initiative for Interdisciplinary Research Review Committee – Member (2013)
- (23) ISU Assistant Dean of Students/Director of Multicultural Student Affairs Search Committee – Member (2013)
- (24) ISU Student Enrollment & Engagement through Connections (NSF) Advisory Committee – Member (2008-2012)
- (25) ISU ADVANCE Council – Member (2011-2012)
- (26) ISU Institutional Operating Plan Committee – Member (2012)
- (27) ISU Student Innovation Center Advisory Committee – Member (2011-2015)
- (28) Iowa STEM Hub Advisory Committee – Member (2012-2015)
- (29) LAS Associate Dean for Academic Affairs Search Committee – Member (2013)
- (30) Iowa STEM Hub Manager Search Committee – Member (2012)
- (31) InTrans Review Team – Member (2010)
- (32) PFF (Preparing Future Faculty) Mentor (5 students, 2015-2023)

### **College of Engineering**

- (1) Directors of Graduate Education (2016-Present)
- (2) CIRAS Director Search Committee – Chair (2022-2023)
- (3) Bioengineering/Biomedical Engineering Minor Advisory Committee – (Chair 2013; 2008-2022)
- (4) Directors of Research (2016-2020)
- (5) Engineering Dean Search Committee – Co-Chair with Luis Rico-Gutierrez – (2018-2019)
- (6) Dean’s Promotion and Tenure Advisory Committee – (2011-2016)
- (7) Engineering Associate Dean for Research Search Committee – Chair (2013)
- (8) College ABET Coordinator – (2011-2013)
- (9) Dean’s Education Initiative – Administrator (2011-2013)
- (10) Engineering Dean Search Committee – Member (2012)
- (11) Interim Director of Engineering College Relations (2011)
- (12) Overall Cost and Utility Cost Reduction Task Force – Chair (2010)
- (13) Department Chair of Electrical and Computer Engineering Search Committee – Chair (2009-2010)
- (14) Multidisciplinary Design Committee – Member (2008-2009)
- (15) Director of Engineering Communications & Marketing Search Committee – Chair (2008)
- (16) Professional Development Committee – Member (2007-2008)

### **Department of Industrial and Manufacturing Systems Engineering**

- (1) IMSE Director of Graduate Education (2016-Present)
- (2) IMSE Graduate Committee – Chair (2008-Present)
- (3) IMSE New Building Committee – Chair (2019-Present)
- (4) IMSE Faculty Mentor (2008-Present)
- (5) IMSE Director of Research (2016-2020)