

University of Miami

Curriculum Vitae

Date: 5-15-18

I. Personal

- Name: Moataz Eltoukhy
- Office Phone: (305) 284-1110
- Current Academic Rank: Assistant Professor
- Primary Department: Department of Kinesiology and Sport Sciences, School of Education and Human Development, University of Miami
- Secondary Appointment: Assistant Professor, Department of Industrial Engineering, College of Engineering, University of Miami

II. Higher Education

- **Institutional:**
 - Ph.D. in Industrial Engineering (Biomechanics). University of Miami, Florida, 2011
 - M.S. in Production Engineering (Mechatronics). Alexandria University, Egypt, 2004
 - B.S. in Production Engineering (Manufacturing Engineering). Alexandria University, Egypt, 2001

III. Experience

- **Academic:**
 - August 2013-Present: Assistant Professor, Department of Kinesiology and Sport Sciences, School of Education and Human Development, University of Miami, USA.
 - March 2017-Present: Assistant Professor (Secondary Appointment), Department of Industrial Engineering, College of Engineering, University of Miami, USA.
 - August 2013-February 2017: Adjunct Faculty, Department of Industrial Engineering, College of Engineering, University of Miami, USA.
 - January 2018-Present: Director of the Exercise Physiology Undergraduate Program, Department of Kinesiology and Sport Sciences, University of Miami, USA.
 - August 2013-Present: Director of the Sports Medicine and Motion Analysis Laboratory, Department of Kinesiology and Sport Sciences, University of Miami, USA.
 - 2004-2005: Lecturer, Department of Production Engineering, Alexandria University, Egypt.
 - 2001-2004: Research Assistant & Assistant Lecturer, Department of Production Engineering, Alexandria University, Egypt.

IV. Publications

- **Book Chapters:**

1. Asfour, S., & **Eltoukhy, M.** (2011). Development and Validation of a Three-Dimensional Biomechanical Model of the Lower Extremity (invited book chapter). In V. Klika (Ed.), *Theoretical Biomechanics* (pp.161-186). Vienna, Austria: InTech.
2. Asfour, S., & **Eltoukhy, M.** (2010). Sustainability and the Challenge of Going Green, (invited book chapter), In Mital, A., & Pennathur, A. (Eds.), *Industrial Resource Utilization and Productivity: Understanding the Linkages* (pp.3-10). New York, NY: Momentum Press.
3. **Eltoukhy, M.**, & Asfour, S. (2008). Braking Process in Automobiles: Investigation of the Thermoelastic Instability Phenomenon (invited book chapter). In: Petrone, G., & Cammarata, G. (Eds.), *Modelling and Simulation* (pp.1-16). Vienna, Austria: InTech.

- **Refereed Journal Articles:** Names of the students are underlined

1. **Eltoukhy, M.**, Kuenze, C., Oh, J., & Signorile, J. (2018). Validation of Static and Dynamic Balance Assessment using Microsoft Kinect for Young and Elderly Populations. *IEEE Journal of Biomedical and Health Informatics*, 22(1), 147-153. Impact factor: 3.85
doi: 10.1109/JBHI.2017.2686330
2. **Eltoukhy, M.**, Kuenze, C., Oh, J., Milian, E., Butler, L., & Signorile, J. (2018). Concurrent Validity of Depth Sensing Cameras for Non-Contact ACL Injury Screening during Side-Cut Maneuvers in Adolescent Athletes: A Preliminary Study. *Journal of Applied Biomechanics*, In Press. Impact factor: 1.39. doi: 10.1123/jab.2018-0105
3. Oh, J., Kuenze, C., Jacopetti, M., Signorile, J., & **Eltoukhy, M.** (2018). Validity of the Microsoft Kinect in Spatiotemporal and Lower Extremity Kinematics during Stair Ascent and Descent in Healthy Young Individuals. *Medical Engineering & Physics*, In Press. Impact factor: 2.18. doi: 10.1016/j.medengphy.2018.07.011
4. Buskard, A., Oh, J., **Eltoukhy, M.**, Brounstein S., & Signorile, J. (2018). A Novel Method to Determine Optimal Load in Elastic-Based Power Training. *Journal of Strength and Conditioning Research*. In Press. Impact factor: 2.325.
doi: 10.1519/JSC.0000000000002759
5. Alamoudi, M., Travascio, F., Onar-Thomas, A., **Eltoukhy, M.**, Asfour, S. (2018). The Effects of Different Carrying Methods on Locomotion Stability, Gait Spatio-Temporal Parameters and Spinal Stresses. *International Journal of Industrial Ergonomic*, 68, 81-88. Impact factor: 1.607. doi: 10.1016/j.ergon.2018.04.012
6. **Eltoukhy, M.**, Kuenze, C., Anderson, M., Oh, J., Jacopetti, M., Wooten, S., & Signorile, J. (2017). Prediction of Ground Reaction Forces for Parkinson's Disease Patients Using a Kinect-Driven Musculoskeletal Gait Analysis Model. *Medical Engineering & Physics*, 50, 75-82. Impact factor: 2.18. doi: 10.1016/j.medengphy.2017.10.004
7. **Eltoukhy, M.**, Kuenze, C., Oh, J., & Signorile, J. (2017). Kinect-based assessment of lower limb kinematics and dynamic postural control during the star excursion balance test. *Gait & Posture*, 58, 421-427. Impact factor: 2.97. doi: 10.1016/j.gaitpost.2017.09.010

8. **Eltoukhy, M.,** Oh, J., Kuenze, C., & Signorile, J. (2017). Improved Kinect-based Spatiotemporal and Kinematic Treadmill Gait Assessment. *Gait & Posture*, *51(1)*, 77-83. Impact factor: 2.97. doi: 10.1016/j.gaitpost.2016.10.001
9. **Eltoukhy, M.,** Kuenze, C., Oh, J., Jacopetti, M., Wooten, S., & Signorile, J. (2017). Microsoft Kinect can Distinguish Differences in Over-ground Gait between Older Persons with and without Parkinson's Disease. *Medical Engineering & Physics*, *44*, 1-7. Impact factor: 2.18. doi: 10.1016/j.medengphy.2017.03.007
10. Kuenze, C., **Eltoukhy, M.,** Chang-Young, K., & Kelly, A. (2017). Impact of Quadriceps Strengthening Response to Fatiguing Exercise following ACL Reconstruction: A Pilot Study. *Journal of Science and Medicine in Sport*, *20(1)*, 6-11. Impact factor: 4.158. doi: 10.1016/j.jsams.2016.04.015
11. Kuenze, C., Kelly, A., Hyung-pil, J., & **Eltoukhy, M.** (2017). Unilateral Quadriceps Strengthening With Disinhibitory Cryotherapy and Quadriceps Symmetry after Anterior Cruciate Ligament Reconstruction. *Journal of Athletic Training*, *52(11)*, 1010-1018. Impact factor: 2.478. doi: 10.4085/1062-6050-52.10.13
12. Balachandran, A. Gandia, K., Jacobs, K., Streiner, D., **Eltoukhy, M.,** & Signorile, J. (2017). Power Training Using Pneumatic Machines vs. Plate-Loaded Machines to Improve Power, Strength and Physical Function in Older Adults. *Experimental Gerontology*, *98*, 134-142. Impact factor: 3.533. doi: 10.1016/j.exger.2017.08.009
13. Chen, G., Shen, J., Barth-Cohen, L., Jiang, S., Huang, X., & **Eltoukhy, M.** (2017). Assessing Elementary Students' Computational Thinking in Everyday Reasoning and Robotics Programming. *Computers & Education*, *191*, 162-175. Impact factor: 5.568. doi: 10.1016/j.compedu.2017.03.001
14. Signorile, J., Rendos, N., Heredia-Vargas, H., Alipio, T., Cota Regis, R., **Eltoukhy, M.,** Nargund, R., & Romero, M. (2017). Differences in Muscle Activation and Kinematics between Cable-Based And Selectorized Weight Training. *The Journal of Strength and Conditioning Research*, *31(2)*, 313-322. Impact factor: 2.325. doi: 10.1519/JSC.0000000000001493
15. Leyva, A., Balachandran, A., Britton, J., **Eltoukhy, M.,** Kuenze, C., Myers, N., & Signorile, J. (2017). The Development and Examination of a New Walking Executive Function Test for People Over 50 Years of Age. *Physiology and Behavior*, *171(15)*, 100-109. Impact factor: 2.885. doi: 10.1016/j.physbeh.2017.01.002
16. **Eltoukhy, M.,** Kelly, A., Kim, C., Hyung-Pil, J., Campbell, R., & Kuenze, C. (2016). Validation of the Microsoft Kinect Camera System for Measurement of Lower Extremity Jump Landing and Squatting Kinematics. *Sports Biomechanics*, *15(1)*, 89-102. Impact factor: 1.154. doi: 10.1080/14763141.2015.1123766
17. **Eltoukhy, M.,** Travascio, F., Elmasry, S., Hernandez, H., Signorile, J., & Asfour, S. (2016). Examination of a Lumbar Spine Biomechanical Model for Assessing Axial Compression, Shear, and Bending Moment Using Selected Olympic Lifts. *Journal of Orthopaedics*, *13(3)*, 210-219. Impact factor: 0.435. doi: 10.1016/j.jor.2015.04.002

18. Kuenze, C., **Eltoukhy, M.**, Thomas, A., Sutherlin, M., & Hart, J. (2016). Validity of Torque Data Collection at Multiple Sites: a Framework for Collaboration on Clinical Outcomes Research in Sports Medicine. *Journal of Sports Rehabilitation*, 25(2), 173-180. Impact factor: 1.413. doi: 10-1123/jsr.2014-0314
19. Stambolian, D., **Eltoukhy, M.**, & Asfour, S. (2016). Development and Validation of a Three Dimensional Dynamic Biomechanical Lifting Model for Lower Back Evaluation for Careful Box Placement. *International Journal of Industrial Ergonomics*, 54(1), 10-18. Impact factor: 1.607. doi: 10.1016/j.ergon.2015.12.005
20. Travascio, F., Hyung, J., **Eltoukhy, M.**, Kuenze, C., Asfour, S., & Signorile, J. (2016). Fluoroscopic Imaging Allows Quantification of Changes in Patellar Tracking due to Taping in Subjects with Patellofemoral Pain. *Jacobs Journal of Sports Medicine*, 3(2), 1-9. Impact factor: N/A.
21. Travascio, F., **Eltoukhy, M.**, & Asfour, S. (2015). A Review on Current Approaches in Spine Biomechanics. *Spine Research*, 1(5), 1-8. Impact factor: N/A. doi: 10.21767/2471-8173.100004
22. **Eltoukhy, M.**, Kuenze, C., Hyung-Pil, J., Asfour, S., & Travascio, F. (2015). Assessment of Dynamic Balance via Measurement of Lower Extremities Tortuosity. *Sports Biomechanics*, 14(1), 18-27. Impact factor: 1.154. doi: 10.1080/14763141.2015.1025238
23. **Eltoukhy, M.**, & Kuenze, C. (2015). Moving Toward Clinic-Based Motion Analysis: Kinect® Camera as an Example. *Sports and Exercise Medicine*, 1(3), 86-88. Impact factor: N/A. doi: 10.17140/SEMOJ-1-113
24. Ni, M., Signorile, J., Mooney, K., Balachandran, A., Potiaumpai, M., Luca, C., Moore, J., Kuenze, C., **Eltoukhy, M.**, & Perry, A. (2015). Comparative Impact of Power Training and High-Speed Yoga on Motor Function in Patients with Parkinson's Disease. *Archives of Physical Medicine and Rehabilitation*, 95(9), 1620-8. Impact factor: 3.625. doi: 10.1016/j.apmr.2015.10.095
25. AlGheshyan, F., **Eltoukhy, M.**, Zakaria, K., Temple, T., & Asfour, S. (2015). Comparison of Gait Parameters in Distal Femoral Replacement using a Metallic Endoprosthesis versus Allograft Reconstruction. *Journal of Orthopaedics*, 12(3), 25-30. Impact factor: 0.435. doi: 10.1016/j.jor.2015.01.022
26. AlGheshyan, F., **Eltoukhy, M.**, Onar, A., & Asfour, S. (2015). Development of a Regression Model for the Treadmill Ground Reaction Force Components. *Sports and Exercise Medicine*, 1(2), 35-41. Impact factor: N/A. doi: 10.17140/SEMOJ-1-106
27. Meyers, A., Caldwell, E., Hirsch, J., **Eltoukhy, M.**, Jacobs, K., Pohlig, R., & Signorile, J. (2015). Bicycle Shoe Insoles and Their Effect on Lateral Knee Movement, Leg Muscle Activation Patterns, and Performance in Experienced Cyclists. *Journal of Science and Cycling*, 4(2), 3-5. Impact factor: N/A.
28. Travascio, F., **Eltoukhy, M.**, Cami, S., & Asfour, S. (2014). Altered Mechano-Chemical Environment in Hip Articular Cartilage: Effect of Obesity. *Biomechanics and Modeling in Mechanobiology*, 13(5), 945-959. Impact factor: 3.212. doi: 10.1007/s10237-013-0545-5

29. **Grant, J., Eltoukhy, M., & Asfour, S.** (2014). Short-Term Electrical Peak Demand Forecasting in a Large Government Building Using a Developed Real-Time Energy Monitoring System and Artificial Neural Network. *Energies*, 7(4), 1935-1953. Impact factor: 2.676. doi: 10.3390/en7041935
 30. **Bonin, S., Eltoukhy, M., Asfour, S., & Hodge, W.** (2012). Conversion of Fused Hip to Total Hip Replacement with Pre- and Post-Surgical Gait Studies. *The Journal of Arthroplasty*, 27(3), 493.e9-493.e12. Impact factor: 3.532. doi: 10.1016/j.arth.2011.07.013
 31. **Eltoukhy, M., Asfour, S., & Ozkaramanli, D.** (2012). The Effect of High-Heeled Shoe Design on the Lower Extremity Kinetics, Kinematics, and Electromyography. *International Journal of Human Factors and Ergonomics*, 1(2), 181-203. Impact factor: 0.12. doi: 10.1504/IJHFE.2012.048033
 32. **Eltoukhy, M., Asfour, S., Thompson, C., & Latta, L.** (2012). Evaluation of the Performance of Digital Video Analysis of Human Motion: Dartfish Tracking System. *International Journal of Scientific and Engineering Research*, 3(3), 1-6. Impact factor: 0.4.
 33. **Lisman, P., Signorile, J., Del Rossi, G., Asfour, S., Eltoukhy, M., Stambolian, D., & Jacobs, K.** (2012). Investigation of the Slow Isoinertial Cervical Strength Training on Dynamic Stabilization of the Head and Neck during Football Tackle. *International Journal of Sports Science and Engineering*, 6(3), 131-140. Impact factor: 0.14.
 34. **Eltoukhy, M., & Asfour, S.** (2011). Comparison between Metallic and Allograft Knee Prosthesis Using Musculoskeletal Modeling. *International Journal of Computational Vision and Biomechanics*, 4(1), 1-9. Impact factor: N/A
 35. **Stambolian, D., Eltoukhy, M., Asfour, S., & Bonin, S.** (2011). Investigation of Avionics Box Precision Placement Using Motion Capturing and Thermal Imaging Techniques. *International Journal of Scientific and Engineering Research*, 2(12), 1-6. Impact factor: 0.4.
- **Refereed Journal Articles (In review):**
 - Agrawal, A., **Eltoukhy, M., Oh, J.,** Perez, M., & Kim, K. Using inertial sensors to detect altered knee biomechanics in patients with knee osteoarthritis. *Gait & Posture*. Impact factor: 2.97.
 - **Roberson, K.,** Signorile, J., Singer, C., Jacobs, K., **Eltoukhy, M.,** Ruta, N., Mazzei, N., Vuorio, B., & **Buskard, A.,** Hemodynamic Responses to an Exercise Stress Test in Parkinson's Disease Patients without Orthostatic Hypotension. *American Journal of Cardiology*. Impact factor: 3.288.
 - Ji, S., **Chen, G.,** Barth-Cohen, L., **Jiang, S., & Eltoukhy, M.** Students' Computational Thinking in Everyday Reasoning and Programming: Evidence from a Humanoid Robotics Curriculum. *Computers & Education*. Impact factor: 5.568.
 - **Stambolian, D.,** Asfour, S., **Eltoukhy, M., & Onar-Thomas, A.,** Analysis of Accurately and Carefully Placing an Aerospace Avionics Box in Restricted Space. *Ergonomics*. Impact factor: 1.85.

- Hyung-pil, J., Kuenze, C., **Eltoukhy, M.**, Kim, C., Lee, S., & Signorile, J. Immediate Effects of Spider-Tech™ Kinesiology Taping in Individuals with Patellofemoral Pain during Functional Task Performance. *Gait & Posture*. Impact factor: 2.97.
- Barth-Cohen, L., Jiang, S., Shen, J., Chen, G., & **Eltoukhy, M.** Interpreting and Navigating Multiple Representations as Central to Computational Thinking in a Robotics Programming Environment. *Journal for STEM Education Research*.
- Mikati, N., **Eltoukhy, M.**, & Huffman, F. Promoting Healthy Eating and Activity using Robot-assisted Training: Project ProHEART. *Preventing Chronic Disease*. Impact factor: 2.123.
- **Refereed Conference Papers:**
 1. Chen, G., Shen, J., Jiang, S., Barth-Cohen, L., & **Eltoukhy, M.** (2018). *Linking Elementary Students' Problem-solving Process to Computational Thinking*. Proceedings of the Annual Conference of American Educational Research Association. New York City, NY.
 2. Shen, J., Huang, C., Barth-Cohen, L., Jiang, S., & **Eltoukhy, M.** (2016). *Developing a Language-neutral Instrument to Assess Fifth Graders' Computational Thinking*. Proceedings of the International Conference of the Learning Sciences, 2, pp. 1179-1180. Singapore: International Society of the Learning Sciences.
 3. Stambolian, D., Asfour, S., & **Eltoukhy, M.** (2014). *Careful and accurate placement of avionics boxes during maintenance of flight hardware*. Proceedings of the IEEE Aerospace Conference (pp.1-7). Big Sky, MT. doi: 10.1109/AERO.2014.6836353
 4. Stambolian, D., Asfour, S., & **Eltoukhy, M.** (2014). *Using vicon bodybuilder and plug-in-gait to generate L5/S1 angles, forces and moments*. Proceedings of the IEEE Aerospace Conference (pp.1-7). Big Sky, MT. doi: 10.1109/AERO.2014.6836487
 5. Stambolian, D., Asfour, S., **Eltoukhy, M.**, & Bonin, S. (2011, June). *Avionics Box Precision Placement in Restricted Space*. Paper presented at the XXIII Annual International Occupational Ergonomics and Safety Conference. Baltimore, MD.
 6. Ozkaramanli, D., Asfour, S., **Eltoukhy, M.**, Stambolian, D., & Bonin, S. (2011, June). *Effect of High-Heeled Shoes Design on Gait Pattern*. Paper presented at the XXIII Annual International Occupational Ergonomics and Safety Conference. Baltimore, MD.
 7. Bittner, A., & **Eltoukhy, M.** (2011, August). *Sample-Size Adjustments (PMSE) to Accommodate Power-Analysis Parameter Uncertainties: Two Correlated Means Illustrations*. Paper presented at the Joint Statistical Meetings-American Statistical Association. Miami, FL.
 8. Bonin, S., **Eltoukhy, M.**, & Asfour, S. (2010, July). *Use of Motion Capturing Systems in the Evaluation of Joint Replacement Surgeries, Case Study: Total Hip Replacement*. Paper presented at the eleventh International Symposium on the 3D Analysis of Human Movement. San Francisco, CA.
 9. **Eltoukhy, M.**, & Asfour, S. (2009, June). *Implementation and Validation of a Detailed Three-Dimensional Inverse Dynamics Lower Extremity Model for Gait Analysis*

Applications. Paper presented at the XXIst Annual International Occupational Ergonomics and Safety Conference. Dallas, TX.

10. Binsaeid, S., Asfour, S., Cho, S., & **Eltoukhy, M.** (2007, October). *Performance Comparison of Machine Learning Algorithms and Feature Reduction Techniques for Tool Conduction Classification During End Milling*. Paper presented at the 37th International Conference on Computers and Industrial Engineering. Alexandria, Egypt.
11. **Eltoukhy, M.**, Asfour, S., Al-Makky, M., & Huang, C. (2006, October). *Thermoelastic Instability in Disk Brakes: Simulation of the Heat Generation Problem*. Paper presented at the COMSOL Users Conference. Boston, MA. Retrieved from static2.comsol.co.in/papers/1606/download/Asfour_pres.pdf
12. Youssef, H., Al-Makky, M., & **Eltoukhy, M.** (2004, May). *Modeling of Grind-Hardening Process using Finite Element Analysis*. Paper presented at the 14th Design Conference of the International Academy for Production Engineering. Cairo, Egypt.

- **Refereed Abstracts:**

1. Butler, L., Milian, E., DeVerna, A., Oh, J., **Eltoukhy, M.**, & Gimenez, C. (2019, January). *The relationship between visually identified movement errors and frontal plane knee moments during side step cutting*. The Specialty Sections of the American Physical Therapy Association (CSM APTA).
2. Wooten, S., Signorile, J., Oh, J., Mishra, S., Young, B., & **Eltoukhy, M.** (2018, March). *3-Dimensional Biomechanical Comparison of Spinal Posture in Yoga Practitioners and Non-Practitioners during a Seated and Standing Position*. International Journal of Exercise Science: Conference Proceedings, 2(10): A35. <https://digitalcommons.wku.edu/ijesab/vol2/iss10/35>
3. Rendos, N., **Eltoukhy, M.**, Smith, W., Kuenze, C., & Signorile, J. (2018, May). *Muscle Activation Characteristics of the Posterior Oblique Sling System in High and Low Economy Runners*. The American College of Sports Medicine Annual Meeting, 49(5): S250.
4. Oh, J., **Eltoukhy, M.**, Kuenze, C., Andersen, M., & Signorile, J. (2018, August). *Comparison of Ground Reaction Forces and Knee Joint Moments between Parkinson's Disease and Healthy Older Adults using a Kinect-Driven Musculoskeletal Gait Analysis Model*. The American Society of Biomechanics Annual Meeting.
5. Butler, L., Milian, E., DeVerna, A., Oh, J., **Eltoukhy, M.**, & Gimenez, C. (2018, January). *The effect of weight bearing dorsiflexion range of motion on lower extremity kinematics during a 45° cut*. The Specialty Sections of the American Physical Therapy Association (CSM APTA). *Journal of Orthopaedic & Sports Physical Therapy*, 48(1): A210.
6. Feigenbaum, L., Roach, K., Martinez, A., Rapicavoli, J., Oh, J., Scavo, V., Kaplan, L., & **Eltoukhy, M.** (2018, January). *The Acute Effects of Orthotics on Pitching Kinematics at the Ankle in Division I Collegiate Pitchers*. The Specialty Sections of the American Physical Therapy Association (CSM APTA). *Journal of Orthopaedic & Sports Physical Therapy*, 48(1): A219.
7. Apanovitch, E., Hurst, M., Chappell, E., Smith, G., Lehnert, D., Martinez, A., Butler, L., DeVerna, A., Gimenez, C., Martorelli, C., **Eltoukhy, M.**, & Oh, J. (2017). *Validation of a*

- clinical screening tool to quantify lower extremity weight bearing symmetry during a drop vertical jump and overhead squat.* Journal of Orthopaedic & Sports Physical Therapy, 47 (1): A163. doi: 10.2519/jospt.2017.47.1.A162
8. Butler, L., Apanovitch, E., DeVerna, A., **Eltoukhy, M.**, Oh, J., Martinez, A., Lehnert, D., Hurst, M., Smith, G., Chappell, E., Gimenez, C., & Martorelli, C. (2017). *Validation of a clinical screening tool to identify anterior cruciate ligament (ACL) risk in adolescent athletes during a 45-degree cut.* Journal of Orthopaedic & Sports Physical Therapy, 47 (1): A169. doi: 10.2519/jospt.2017.47.1.A162
 9. **Eltoukhy, M.**, Kuenze, C., Oh, J., & Signorile, J. (2017, May). *Balance Assessment using Microsoft Xbox Kinect.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. Denver, CO. 49(5): S1135.
 10. Oh, J., **Eltoukhy, M.**, Wooten, S., Kuenze, C., & Signorile, J. (2017, May). *Validation of the Kinect-based Star Excursion Balance Test.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. Denver, CO. 49(5): S1136.
 11. Rendos, N., **Eltoukhy, M.**, Smith, W., Kuenze, C., Asfour, S., & Signorile, J. (2016, May). *Identification of Sling Systems in High Economy and Low Economy Runners.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 48(5): S840.
 12. Kelly, A., Kuenze, C., Kim, C., & **Eltoukhy, M.** (2016, May). *The Effectiveness of a Video Game Camera System for Measurement of Landing and Squatting Kinematics.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 48(5): S797.
 13. Richardson, M., Rendos, N., **Eltoukhy, M.**, & Signorile, J. (2016, May). *Comparative Impacts of Plate-Loaded and Cable Resistance Machines on Muscle Activity and Joint Kinematics.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 48(5): S364.
 14. Kuenze, C., Kelly, A., & **Eltoukhy, M.** (2016, May). *Impact Quadriceps Strengthening on Quadriceps Function and Patient Reported Outcomes after ACL Reconstruction.* Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 48(5): S889.
 15. Mikati, N., **Eltoukhy, M.**, & Huffman, F. (2016). *Using a Humanoid Robot Along With a Registered Dietitian in an After-School Program to Promote Healthy Eating Habits and Physical Activity in School-aged Children.* The Federation of American Societies in Experimental Biology Journal. 30(1): S276.8.
 16. Alhandi, A., Pastoriza, S., Travascio, F., **Eltoukhy, M.**, Latta, L., Asfour, S., & Zych, G. (2016, March). *Defining Loading on Lower Limb Joints with Partial-Weight Bearing Crutch Ambulation: A Biomechanical Study.* Abstract presented at the Orthopaedic Research Society (ORS) Annual Meeting. Lake Buena Vista, FL.
 17. Kelly, A., **Eltoukhy, M.**, Kim, C., & Kuenze, C. (2016, June). *Effects of Unilateral Quadriceps Strengthening on Quadriceps Symmetry following ACL Reconstruction.* Abstract presented at the National Athletic Trainer's Association 67th Clinical Symposia and AT Expo, Baltimore, MI.

18. **Eltoukhy, M.**, Wagener, G., Ordille, A., Drozdowicz, K., Epstein, C., Kuenze, C., & Signorile, J. (2015, May). *Effect of Individualized High-Velocity Resistance Training on Balance Performance in Children with Cerebral Palsy*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S247.
19. Changyoung, K., **Eltoukhy, M.**, & Signorile, J. (2015, May). *Effect of Individualized High-Velocity (Power) Resistance Training Program on Gait Biomechanics of Children with Cerebral Palsy*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S176.
20. Hernandez, H., **Eltoukhy, M.**, Travascio, F., Asfour, S., & Signorile, J. (2015, May). *Mechanical load Distribution in Lumbar Spine during Lifts Associated with CrossFit Workouts*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S146.
21. Rendos, N., Kuenze, C., **Eltoukhy, M.**, Travascio, F., Hyung-Pil, J., Asfour, S., & Signorile, J. (2015, May). *Tortuosity as a Novel Assessment Tool of Dynamic Balance*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S420.
22. Hyung-pil, J., Travascio, F. **Eltoukhy, M.**, Kuenze, C., Asfour, S., & Signorile, J. (2015, May). *Fluoscopic Video Imaging as a Clinical Tool for Assessing Patellar Maltracking*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S71.
23. Kuenze, C., Hyung-Pil, J., Chang-Yun K., & **Eltoukhy, M.** (2015, May). *Impact of a 2 Week Quadriceps Strengthening Program on Response to Fatigue following ACL Reconstruction*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S836.
24. Hirsch, J., Meyers, C., Caldwell, E., **Eltoukhy, M.**, Pohlig, R., & Signorile, J. (2015, May). *Effects of Arch Support on Leg Muscle EMG and Performance in Experienced Cyclists*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S709.
25. Caldwell, E., Meyers, C., Hirsch, J., **Eltoukhy, M.**, Pohlig, R., & Signorile, J. (2015, May). *Orthotic Insoles Show no Acute Effects on Knee Kinematics during Pedaling in Experienced Cyclists*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 47(5): S66.
26. Alhandi, A., **Eltoukhy, M.**, Travascio, F., Segal, D., Kim, C., Latta, L., Asfour, S., & Hechtman, K. (2015, March). *EMG Analysis of Hamstring Muscles Looking at 8 Potential Gait Protocols for Post -Operative Proximal Hamstring Muscle Repair*. Abstract presented at the Orthopaedic Research Society (ORS) Annual Meeting. Las Vegas, NI.
27. Alhandi, A., Pastoriza, S., Travascio, F., **Eltoukhy, M.**, Latta, L., Asfour, S., & Zych, G. (2015, March). *Defining Loading and Moments on Joint with Crutch Ambulation: A Biomechanical Study*. Abstract presented at the Orthopaedic Research Society (ORS) Annual Meeting. Las Vegas, NI. Retrieved from <http://prgmobileapps.com/AppUpdates/ors2015/Abstracts/abs1008.html>

28. Meyers, C., Caldwell, E., Hirsch, J., **Eltoukhy, M.**, Jacobs, K., Pohlig, R., & Signorile, J. *Bicycle Shoe Insoles and Their Effect on Lateral Knee Movement, Leg Muscle Activation Patterns, and Performance in Experienced Cyclists*. Science & Cycling.1-2 July 2015, Utrecht, Netherlands.
 29. Seigel, J., Signorile, J., **Eltoukhy, M.**, & Ahn, S. (2014, May). *Analyzing Muscle Utilization Patterns to Maintain Balance during Dynamic Balance Testing*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 46(5): S535.
 30. Meyers, C., **Eltoukhy, M.**, & Signorile, J. (2013, September). *A Novel Method to Model a Cyclist in Situ*. Paper presented at the 37th Annual Meeting of the American Society of Biomechanics, Omaha, NB. Retrieved from <http://www.asbweb.org/conferences/2013/abstracts/262.pdf>
 31. Meyers, C., **Eltoukhy, M.**, & Signorile, J. (2013, September). *Rapid Prototyping in Sports Research*. Paper presented at the 37th Annual Meeting of the American Society of Biomechanics, Omaha, NB. Retrieved from <http://www.asbweb.org/conferences/2013/abstracts/267.pdf>
 32. Meyers, A., **Eltoukhy, M.**, Asfour, S., & Signorile, J. (2013, May). *Kinematic differences between barefoot and shod running in a triathlete post-ride*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 45(5): S503.
 33. Heredia-Vargas, H., **Eltoukhy, M.**, Asfour, S., Figuerola, Y., Hyung-Pil, J., Botross, S., Biagioli, B., Asfour, Y., Balachandran, A., & Signorile, J. (2013, May). *EMG changes of eight muscles during the performance of the power clean by novice lifters*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 45(5): S489.
 34. Figuerola, Y., Heredia-Vargas, H., **Eltoukhy, M.**, Asfour, S., Hyung-Pil, J., Botross, S., Asfour, Y., Biagioli, B., Hernandez, R., & Signorile, J. (2013, May). *Differences in muscle utilization during the hang clean with and without lifting straps*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 45(5): S182.
 35. Lisman, P., Signorile, J., Del Rossi, G., Asfour, S., Abdelrahman, K., **Eltoukhy, M.**, Stambolian, D., & Jacobs, K. (2010, May). *Cervical Strength Training Does Not Enhance Dynamic Stabilization of Head and Neck During Football Tackling*. Abstract presented at the Medicine & Science in Sports & Exercise (ACSM) Annual Meeting. 42(5): S679.
- **Poster Presentations:**
 1. AlGeshyan, F., Alamoudi, M., Travascio, F., **Eltoukhy, M.**, Zakaria, K., Temple, H., & Asfour, S. (2018, March). *The effect of Distal Femoral Replacement Using a Metallic Endoprosthesis and Allograft Reconstruction on Locomotion Stability*. Poster session presented at the Orthopaedic Research Society (ORS) Annual Meeting, New Orleans, LA.
 2. Barth-Cohen, L., Shen, J., Chen, G., Jiang, S., & **Eltoukhy, M.** (2017, April). *Elementary School Students' Computational Thinking Practices in a Robotics-Programming*

Environment. Poster session presented at the American Educational Research Association (AERA) Annual Meeting. San Antonio, TX.

3. Rendos, N., **Eltoukhy, M.**, Smith, W., & Signorile, J. (2016, May). *Variance in Muscular Sling Systems between High Economy and Low Economy Recreational Runners*. Poster session presented at the American College of Sports Medicine 63rd Annual Meeting, Boston, MA.
 4. Barth-Cohen, L., **Eltoukhy, M.** & Shen, J. (2016, April). *Students Meta-Representational Competence in a Humanoid Robotics Programming Environment*. Poster session presented at the American Educational Research Association (AERA) Annual Meeting. Washington, DC.
 5. Shen, J., Barth-Cohen, L., & **Eltoukhy, M.** (2016, June). *Transformative Robotics Experience for Elementary Students*. Poster session presented at the National Science Foundation (NSF) DR K-12 PI Meeting. Washington, DC.
 6. Barth-Cohen, L., Muir, A., Shen, J., & **Eltoukhy, M.** (2016, January). *Computer Science Classroom Integration Using Robotics and Coding*. Symposium conducted at the 36th Annual National Future of Education Technology Conference (FETC). Orlando, Florida.
 7. Hyung-Pil, J., Kuenze, C., **Eltoukhy, M.**, Lee, S., Kim, C., Harriell, K., & Signorile, J. (2015, June). *Immediate Effects of Therapeutic Taping in Individuals with Patellofemoral Pain during Functional Task Performance*. Poster session presented at the National Athletic Trainer's Association 66th Clinical Symposia and AT Expo, St. Louis, MI.
 8. Elmasry, S., **Eltoukhy, M.**, Ziff, M., Travascio, F., & Asfour, S. (2014, July). *A Novel Approach for Predicting In-Vivo Lumbar Spine Loads and Kinematics Based on Motion Analysis*. Poster session presented at the 7th World Congress of Biomechanics, Boston, MA.
 9. Asfour, S., Cami, S., **Eltoukhy, M.**, & Latta, L. (2013, January). *Effect of Body Mass Index on Gait Biomechanics*. Poster session presented at the Orthopaedic Research Society (ORS) Annual Meeting, San Antonio, TX.
 10. **Eltoukhy, M.**, Asfour, S. (2012). *Advancing Patient-Specific Joint Implants Design and Surgery Planning Through Optimization-Based 3D Musculoskeletal Modeling*. Annual Postdoctoral Fellows Research Event, National Postdoc Appreciation Week, Miami, FL.
 11. Asfour, S., & **Eltoukhy, M.** (2009, August). *Green Manufacturing: Challenges of a New Era*. Poster presented at the 1st International Conference on Enhancing Resource Effectiveness in the Workplace, Kathmandu, Nepal.
- **Published Interviews, Television Appearances and News Coverage:**
 1. National Science Foundation (NSF). (2016, May 16). *Transformative Robotics Experience for Elementary Students* [Video coverage]. Advancing STEM Learning For All: Sharing Cutting Edge Work and Community Discourse. NSF Video Showcase. Retrieved from http://stemforall2016.videohall.com/presentations/743?show_mc=true#posts_10978

2. Broward Education Communications Network. (2015, April 2). *Robotics* [TV coverage]. Friday Focus Something Special Video. Ft. Lauderdale, FL: BECON TV / WBEC-TV. Retrieved from <http://browardschools.com/News-And-Events/Friday-Focus/Week-Ending-April-10,-2015>
 3. Yutzy, E. (Anchorman). (2014, April 10). *Dancing robot helps South Fla. kids get fit* [TV News]. Miami, FL: Local 10 News. Retrieved from www.local10.com/news/dancing-robot-helps-south-fla-kids-get-fit/25422412
 4. Fishman, S. (2015, April 2). High-tech experience in Davie. *Sun Sentinel Newspaper*. Retrieved from www.sun-sentinel.com/local/broward/davie/fl-cn-robotics-0329-20150402-story.html
 5. Fantozzi, M. (2014, March 25). UM uses dancing robot to get kids excited about fitness. *The Miami Herald Newspaper*. Retrieved from www.miamiherald.com/news/local/community/miami-dade/pinecrest/article1962000.html
 6. SoftBank Robotics Europe. (Producer). (2014, December 11). Chat About University of Miami - U.S) STEM/ Health & Nutrition / Autism [Short documentary]. Retrieved from www.youtube.com/watch?v=qW4M-Mo3dwg&app=desktop & www.schooltube.com/video/37cc14ed9abd4e12854d/NBF%20Robotics
 7. Jones Jr., R. (2014, Summer). *Making Biomechanical Magic* [The University of Miami Magazine]. Retrieved from <http://miami.univmiami.net/making-biomechanical-magic/>
 8. Westlund, R. (2015, Spring). *Robot Gives STEM Learning Lessons to Broward Students* [Perspective Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/PERSPECTIVE-Spring-2015-1.pdf>
 9. Westlund, R. (2014, Fall). *Studying the Prevention and Rehabilitation of Knee Injuries* [Perspective Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/PERSPECTIVE-Fall-2014.pdf>
 10. Westlund, R. (2014, Spring). *Robot "Teacher" Helps Elementary Students Improve Health and Fitness* [Perspective Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/PERSPECTIVE-Spring-2014.pdf>
 11. Westlund, R. (2014, March 27). Doing the Robot: Robotic 'Instructor' Helps Elementary School Students Get Fit. *eVeritas Magazine*. Retrieved from <http://everitas.univmiami.net/2014/03/27/doing-the-robot-robotic-instructor-helps-elementary-school-students-get-fit/>
 12. University of Miami Viewbook. (2014, July 8). *All About the U*. Retrieved from <http://issuu.com/universityofmiamiadmission/docs/universityofmiamiviewbook>
- **Published Media Coverage:**
 1. Jones, R. (2017, December). *A Step Ahead of the Game* [University of Miami President's Report]. Retrieved from http://president.miami.edu/_assets/pdf/presidents-report-2017.pdf
Or <https://www.youtube.com/watch?v=H-X74J4K34g>
 2. Westlund, R. (2017, Winter). *KIN Professors Use XBOX to Study Parkinson's Disease*

- [Perspective Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2017/12/UMSEHD-Perspective-RGB.pdf#page=2>
3. White, A. (2017, Fall). *Drs. Signorile and Eltoukhy Continue Groundbreaking Research* [The KIN Insider-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2017/12/KIN-Insider-Fall-2017-2.pdf>
 4. Vlastic, J. (2017, Spring). *Provost's Award: Innovative Parkinson's Disease Home-Based Rehabilitation Using Microsoft Xbox Kinect* [The KIN Insider-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2017/04/KIN-NEWSLETTER-Spring-2017.pdf>
 5. Westlund, R. (2016, Spring). *Professor Speaks at Technology Conference* [Perspective Magazine-SEHD]. Retrieved from <https://www.joomag.com/magazine/perspective-spring-2016/0520697001463773354>
 6. Resnik, P. (2016, Spring). *TechB Conference* [The KIN Insider-SEHD]. Retrieved from http://www.education.miami.edu/newsletters/KIN_Newsletter_Fall_2016.pdf
 7. Resnik, P. (2016, Spring). *Collaboration between the Max Orovitz Laboratory and Industrial Engineering Produces One of the Most Downloaded Articles in the Journal of Orthopedics* [The KIN Insider-SEHD]. Retrieved from http://www.education.miami.edu/newsletters/KIN_Newsletter_Fall_2016.pdf
 8. Westlund, R. (2015, Fall). *Robot Helps Broward Students Learn About STEM Careers* [Perspective Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/PERSPECTIVE-Fall-2015.pdf>
 9. The Broward County Public Schools News Press. (2015, March). *Nova Blanche Forman Elementary School Partners with the UM for STEM Pilot Program*. Retrieved from www.browardschools.com/News-And-Events/News/Nova-Blanche-Forman-Elementary-School-Partners-Wit#.VQcgVNm9Kc1
 10. McDonlad, L. (2015, Spring). *Nova Blanche Forman Elementary School Partners with the UM for STEM Pilot Program* [The Educator Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/Educator-Spring2015.pdf>
 11. McDonlad, L. (2014, Summer). *Introducing NAO* [The Educator Magazine-SEHD]. Retrieved from <http://sites.education.miami.edu/wp-content/uploads/2016/08/Educator-Summer2014.pdf>
 12. Resnik, P. (2015, Spring). *KIN Project TREES gets local coverage in Sun-Sentinel* [The KIN Insider-SEHD]. Retrieved from www.education.miami.edu/newsletters/KIN%20Newsletter%20Spring%202015.pdf
 13. Resnik, P. (2014, Spring). *Faculty Spotlight* [The KIN Insider-SEHD]. Retrieved from http://www.education.miami.edu/newsletters/KIN_Newsletter_Spring_2014.pdf
 14. Ufberg, D. (2015, November 15). *Elementary school field trip probes into robotics, engineering applications* [The Miami Hurricane Newspaper]. Retrieved from <http://www.themiamihurricane.com/2015/11/15/field-trip-robotics/>

• **Internet Citations:**

1. Camel, M. (2016, April 20). *Frenk Discusses Innovation Hub at eMerge*. eVeritas Magazine. Retrieved from <http://everitas.univmiami.net/2016/04/24/70466/>

& <http://news.miami.edu/stories/2016/04/innovation-ecosystem.html>

2. Ward, T. (2016, March 30). Behavioral Science in the 21st Century. *MiABA's Tech B Conference To Feature Robot-Delivered ABA Services*. Retrieved from <http://www.bsci21.org/miabas-tech-b-conference-to-feature-robot-delivered-aba-services/>
 3. Bell, M. (2015, November 16). *Soccer-Playing Robot Introduces Fifth-Graders to Science and Technology*. eVeritas Magazine. Retrieved from <http://www6.miami.edu/communications/everitas/2015/11-16-15.html>
 4. Broward County News Release. (2014, September 15). *Broward County's South Regional/Broward College Library to Host 6th Annual TechFest*. Retrieved from <https://webapps.broward.org/newsrelease/AdminDisplayMessages.aspx?intMessageId=5541>
- **Non-Refereed Publications:**
 1. **Eltoukhy, M.**, Kuenze, C., Oh, J., & Signorile, J. (2017). Three-Dimensional Biomechanical Assessment of Treadmill Gait using Microsoft Xbox Kinect. (Invited paper). *Atlas of Science*. Retrieved from <https://atlasofscience.org/three-dimensional-biomechanical-assessment-of-treadmill-gait-using-microsoft-xbox-kinect/>
 2. Asfour, S., & **Eltoukhy, M.** (2008). Developing an Intelligent, Multisensor Tool Monitoring System for Tool Wear and Breakage Detection. *National Instruments Case Studies*. Retrieved from <http://sine.ni.com/cs/app/doc/p/id/cs-11359>
 3. **Eltoukhy, M.**, Asfour, S., Al-Makky, M., & Huang, C. (2007, July). Simulation of Heat Generation in Analyzing Thermoelastic Instability in Disk Brakes. (Invited paper). *NASA Tech Briefs*. Retrieved from www.techbriefs.com/component/content/article/2018
 4. Al-Makky, M., & **Eltoukhy, M.** (2003). Data Acquisition System for Force Measurements in Grind-Hardening Process. *National Instruments for Experiential Education*. Retrieved from www.ti-acad.jo/userfiles/NI%20Arabia%20Academic%20Catalogue.pdf

V. Professional

- **Funded Research Projects:**
 - **Funding agency:** Provost's Research Award (Natural Sciences and Engineering), University of Miami
Role: Principal Investigator
Project title: Innovative Parkinson's Disease Home-based Rehabilitation using Microsoft Xbox Kinect
Period: 06/01/17-05/31/18
Total grant amount: \$16,750
 - **Funding agency:** Parkinson's Disease Foundation (PDF)
Program: Parkinson's Advocates in Research (PAIR) Leadership Award
Role: Co-Principal Investigator
Project title: Assessment of Changes in Gait Patterns during Cognitive and Visual Dual-Tasking using the Xbox Kinect System

Period: 7/1/17-6/30/18

Total grant amount: \$10,000

Principal Investigator: Dr. Joseph Signorile

- **Funding agency:** SEHD Research Pilot Funding Award

Role: Principal Investigator

Project title: Management of the Parkinson's Disease Socio-economic Challenges for Minorities using an Innovative Holistic Agent-based Simulation Approach

Period: 06/1/18-12/15/18

Total grant amount: \$10,000

- **Funding agency:** Sherman Fairchild Foundation

Role: Co-Investigator

Project title: Translational Health in Nutrition and Kinesiology (THINK)

Period: 06/01/16-05/31/17

Total grant amount: \$100,000

Principle Investigator: Dr. Arlette Perry

- **Funding agency:** National Science Foundation (NSF)
Program: Discovery Research K-12

Role: Co-Principal Investigator

Project title: Transformative Robotics Experience for Elementary Students (TREES)

http://www.nsf.gov/awardsearch/showAward?AWD_ID=1523010&HistoricalAwards=false
& <http://sites.education.miami.edu/trees/>
Award ID: 1523010

Period: 05/15/15-04/30/17

Total grant amount: \$299,737

Principal Investigator: Dr. Ji Shen

- **Funding agency:** Provost's Research Award (Natural Sciences and Engineering),
University of Miami

Role: Principal Investigator

Project title: Robot-based Childhood Intervention for Autism and Obesity (rCIAO)

Period: 06/01/15-05/31/16

Total grant amount: \$14,000

- **Funding agency:** Donation-Michael J. Piechoski, member of the University of Miami
Board of Trustees and the Athletic Director's Advisory Committee

Role: Principal Investigator

Project title: Use of Humanoid Robots in the Elementary Public School System.

Period: March 2015

- Total gift amount:** \$8,000

 - **Funding agency:** Somi Fitness
Project title: Donation-Scholarship fund for the Department of Kinesiology and Sport Sciences
Period: September 2015
Total grant amount: \$5,183
 - **Funding agency:** University of Miami's Presidential Gift
Role: Principal Investigator
Project title: Use of humanoid robots in the school system.
Period: May 2014
Total gift amount: \$12,000
 - **Funding agency:** Citizens Board Select Projects Fund, University of Miami
Role: Principal Investigator
Project title: The Effectiveness of Kinesio® Tape and the McConnell Taping Technique on Neuromuscular Characteristics of the Vastus Medialis Oblique and Vastus Lateralis, Joint Kinematics, and Pain in Individuals with and without Patellofemoral Pain Syndrome during Functional Task Performance
Period: November 2013 till May 2014
Total grant amount: \$4,000
 - **Funding agency:** Department of Energy (DoE)
Role: Investigator and Assistant Director
Project title: University of Miami Industrial Assessment Center (MIAC)
Period: 09/30/11-08/31/13
Total grant amount: \$1,000,000
Principle Investigator: Dr. Shihab Asfour
- **Pending Research Projects:**
 - **Funding agency:** National Science Foundation (NSF)
Program: STEM + Computing K-12 Education (STEM+C)
Role: Co-Principal Investigator
Project title: Integrated Robotics Experience for Elementary Students (IREES)
Total grant amount: \$1,176,309
Principal Investigator: Dr. Ji Shen
 - **Funding agency:** American Parkinson Disease Association (APDA)
Role: PI
Project title: Development of a Data Driven Decision Support System for the Management of Parkinson's Disease

Total grant amount: \$49,666

- **Funding agency:** Davis Phinney Foundation for Parkinson's

Role: PI

Project title: Effective Dose-response Relationships during Power Training in Parkinson's Patients.

Total grant amount: \$100,000

- **Funding agency:** PEMF Systems, Inc.

Project title: A Clinical Trial to Demonstrate the Safety and Effectiveness of Pulsed Electro-Magnetic Field Therapy to Reduce Pain and Improve Mobility in Degenerative and Traumatic Knee Conditions.

Role: Site PI

Total grant amount: \$350,000

My grant share: \$120,819

- **Funding agency:** Department of Defense (DoD)

Program: Congressionally Directed Medical Program (CDMRP)
Accelerating Innovations in Military Medicine Research Award

Role: Co-I

Project title: Mapping Movement to Music: A Smartphone App for Increasing Physical Activity through Audio Biofeedback Training in People with Knee Osteoarthritis

Total grant amount: \$537,250

- **Funding agency:** National Institute of Health (NIH)

Program: Research Scientist Career Development Award (K01)

Role: Collaborator

Project title: Development of a Therapeutic Intervention for Patients with Knee Osteoarthritis to Reduces the Reliance on Activity Modifications to Complete Functional Tasks.

- **Funding agency:** National Institutes of Health (NIH)

Program: National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS)

Role: Co-I

Project title: Development of a Clinical Biomarker for Identifying the Risk of Post-traumatic Knee Osteoarthritis in Individuals with a Knee Injury.

Total grant amount: \$275,000

- **Unfunded Research Projects:**

- **Funding agency:** Davis Phinney Foundation for Parkinson's

Project title: Understanding the Socio-economic Burden of the Parkinson's Disease on Minorities: A Novel Agent-based Simulation Approach

- Role:** PI **Year:** 2018

 - **Funding agency:** Robert Wood Johnson Foundation
Program: Pioneering Ideas and a Culture of Health
Project title: Program iKARE (Individualized Kinect-Assisted Rehabilitation for the Elderly)
- Role:** PI **Year:** 2017

 - **Funding agency:** National Institute of Health (NIH)
Program: National Center for Medical Rehabilitation Research (NCMRR) Early Career Research Award (R03) (PAR-17-161)
Project title: Validation of Two Smart Device Assisted Clinical Screening Tools in Adolescent Athletes who are at Risk for ACL Injury
- Role:** Co-I **Year:** 2017

 - **Funding agency:** University of Miami
Program: U-LINK (University of Miami Laboratory for INtegrative Knowledge).
Project title: Development of a Cost-effective Real-time Decision Support System for Surgical Deep Brain Stimulation in Parkinson's Disease
- Role:** PI **Year:** 2017

 - **Funding agency:** National Science Foundation (NSF)
Program: Discovery Research PreK-12 (DRK-12) (NSF 15-592)
Project title: Project Imagine the Future (IF) - Designing interdisciplinary STEM Learning for Middle School Students
- Role:** Co-PI **Year:** 2017

 - **Funding agency:** The National Institute for Occupational Safety and Health (NIOSH)
Project title: Influence of Body Composition on Occupational Exposure of the Musculoskeletal System
- Role:** Co-I **Year:** 2017

 - **Funding agency:** Department of Defense (DoD)
Program: Congressionally Directed Medical Research Programs
Parkinson's Research Program (W81XWH-16-PRP-IA)
Project title: Dose-Response Relationship during Resistance Training that Maximizes Neuromuscular, Functional and Cognitive Performance
- Role:** Co-PI **Year:** 2016

 - **Funding agency:** National Institute of Health (NIH)
Program: R15 (1 R15 HD091819-01)
Project title: Promoting Healthy Eating and Activity using Robot-assisted Training: ProHEART
- Role:** Co-I **Year:** 2016

- **Funding agency:** United States Department of Agriculture (USDA)
Program: Agriculture and Food Research Initiative - Childhood Obesity Prevention Challenge Area (USDA-NIFA-AFRI-005845)
Project title: Promoting Healthy Eating and Activity using Robot-assisted Training: ProHEART
Role: Co-I **Year:** 2016
- **Funding agency:** The AstraZeneca HealthCare Foundation's
Program: Connections for Cardiovascular Health program
Project title: The Effects of a Translational Health In Nutrition & Kinesiology (THINK) Program on Improving Health-Related Fitness and Nutrition and Reducing Cardiometabolic Risk Factors in Minority Adolescents
Role: Co-PI **Year:** 2016
- **Funding agency:** Patient-Centered Outcomes Research Institute (PCORI)
Program: Large Pragmatic Studies
Project title: A Comparison of a Traditional versus Translational Health after School Program on Fitness, Metabolic and Psycho-behavioral Variables in Underserved Minority Adolescents
Role: Co-PI **Year:** 2015
- **Funding agency:** Department of Defense (DoD)
Program: Congressionally Directed Medical Research Program
Project title: Development of an Unconstrained Motion Capture System for Rehabilitation and High-level Activities
Role: Co-I **Year:** 2014
- **Funding agency:** The National Aeronautics and Space Administration (NASA)
Program: Planetary Science and Technology Through Analog Research program (PSTAR) (NNH14ZDA001N-PSTAR)
Project title: Virtual Operator Environment (VOE)
Role: PI **Year:** 2014
- **Funding agency:** The National Aeronautics and Space Administration (NASA)
Program: The National Space Biomedical Research Institute (NSBRI) (NNJ13ZSA002N-NSBRI)
Project title: Virtual Mentor Training (VMT)
Role: PI **Year:** 2013
- **Editorial responsibilities:**
Section Editor:
 - *Measurement in Physical Education and Exercise Science* (2017, July - Present) (Exercise Science section editor)

<http://www.tandfonline.com/action/journalInformation?show=editorialBoard&journalCode=hmpe20>

Editorial board member:

- *Journal of Functional Morphology and Kinesiology* (2015, July - Present)
www.mdpi.com/journal/jfmk/editors
- *Spine Research* (2015, August - Present)
<http://spine.imedpub.com/editors.php/>

Ad Hoc Reviewer:

- *Journal of Strength and Conditioning Research*. 2015, October – Present (2018, May), reviewed 19 papers
- *Medical Engineering & Physics*. 2017, October – Present (2018, May), reviewed 5 papers

Reviewer:

- *Journal of Biomechanics*
 - *Gait & Posture*
 - *Sports Biomechanics*
 - *Measurement in Physical Education and Exercise Science*
 - *Sensors*
 - *PLOS ONE*
 - *Journal of Science and Medicine in Sport*
 - *IEEE Transactions on Neural Systems & Rehabilitation Engineering*
 - *Journal of Intelligent and Robotic Systems*
 - *IEEE International Conference on Robotics and Automation (ICRA 2017)*
- **Other Professional Responsibilities:**

Grants Reviewer:

- UM Provost's Research Award: Natural Sciences and Engineering, 2016.

- **Professional and Honorary Organizations:**

- American Academy of Physical Medicine and Rehabilitation (AAPM&R)
- American Statistical Association (ASA)
- Academy of Scientific Research and Technology, Egypt
- Society of Manufacturing Engineering (SME), USA

- **Honors and Awards:**

- 2017, 2016 & 2015: Jeonghoon Oh (Dr. Eltoukhy's advisee) received the Barbara Marks Scholarship.
- 2016: Nadine Mikati (Dr. Eltoukhy's advisee) received the American Society for Nutrition's (ASN) Nutritional Sciences Council (NSC) 2016 Graduate Student Research Award.

- Research Assistantship. University of Miami, College of Engineering, Department of Industrial Engineering. 2005-2011.
- Inducted member- Industrial Engineering Honor Society (Alpha-Pi-Mu), USA. 2006
- Certificate of Merit, 4th International Conference, RETBE'02, "Role of Engineering toward Better Environment", Egypt, 2002.
- Engineers Syndicate Award (Excellence in Production Engineering), Egypt, 2001.
- October 6th University Award (Excellence in Production Engineering), Egypt, 2001.
- Inspectorite Award (Excellence in Quality Control), Egypt, 2001.
- Tartousia Award (Excellence in Metal Cutting), Egypt. 2001.
- Zahran Award (Ranked 1st of the Production Engineering Department), Egypt, 2001.
- Alexandria University 1st place award, Egypt, 2001.
- The German-Egyptian Student Exchange Research Scholarship, University of Bremen, Institute of Material Science (IWT), Germany. June-September 2000.
- **Post-Doctoral Fellowships:**
 - Department of Industrial Engineering, College of Engineering, University of Miami, USA, August, 2011-July, 2013.
- **Outside Professional Activities:**
 - **Invited Speaker:**
 - *Biomechanics Made Fun*. Brown Bag Research Forum, University of Miami, March 8, 2017.
 - *Using Humanoid Robots to Promote Healthy Eating Habits, Physical Activity, and Computational Thinking for Elementary Students*. Technology and Behavior Analysis Conference (TechB: Return of the Robots), April 9, 2016. www.techbconference.com
 - **Industry and Community Presentations:**
 - **Eltoukhy, M.** *Transformative Robotics Experience for Elementary Students (TREES)*. eMerge Americas Technology Conference, April, 2016.
 - Signorile, J., **Eltoukhy, M.**, Potiaumpai, M., & Balachandran, A. *EMG and weight training with Sebastian the Robot*. Mr. and Ms. South Miami NPC SomiClassic, September, 2015.
 - **Eltoukhy, M.** *Childhood Obesity Prevention...Using Robots!*. eMerge Americas Technology Conference, May, 2014.
- **UM-Sponsored Activities:**
 - **Eltoukhy, M.** *Sebastian "the robot": One robot Limitless Applications*. Invited talk at the UM Alumni Weekend & Homecoming. October, 2014.
 - "Sebastian the Robot" presentation at the University of Miami Board of Trustees Annual Meeting. Presented by former President Donna Shalala. May, 2014.
 - **Eltoukhy, M.** *Improving Children Physical and Mental Well-Being...Using Robots!*. Invited talk at SEHD annual Faculty & Staff meeting. October, 2014.

- **Eltoukhy, M.** *Sebastian the robot: One robot Limitless Applications.*
Invited talk at SEHD Homecoming Breakfast. October, 2014.

VI. Teaching

- **Teaching Specialization:**

Department of Kinesiology and Sport Sciences, School of Education and Human Development, University of Miami:

- KIN 345 – Kinesiology. (Fall 2015-Present)
- KIN 435 – Clinical Biomechanics for Sports Medicine Professionals. (Spring 2014-Present)
- KIN 746 – Research Methods in Exercise and Sport Sciences. (Spring 2014-Present)
- KIN 735 – Methods in Biomechanical Analysis. (Fall 2012-Present)
- KIN 495 – Individual Study. (Fall 2017-Present)

Department of Industrial Engineering, College of Engineering, University of Miami:

- IEN 406 – Computer-Aided Manufacturing. (Spring 2009-Present)
- IEN 306 – Manufacturing Processes. (Fall 2010)
- IEN 595 – Special Problems–Thesis/Individual Study. (Fall 2012-Present)
- ECE/BME 100 – Summer Scholars–Computer Aided Manufacturing and Biomechanics Topics. (2012-Present)

Department of Production Engineering, College of Engineering. Alexandria University, Egypt (2001-2005):

- Introduction to Production Engineering
- Advanced Production Engineering
- Forming Processes
- Metal Cutting Processes
- Theory of Machines
- Engineering Economy
- Machine Tool Design
- Theory of Metal Cutting
- Non-Conventional Machining
- NC and CNC Technology
- Robotics and Control
- Project Management
- Computer Aided Design
- Advanced Machining Techniques

- **Thesis and Dissertation Advising/Post-doctoral student supervision:**

Dissertation Committee Chair:

1. "Prediction of Hip Joint Moments and Ground Reaction Forces in Hip Replacement Patients using Kinect-driven Musculoskeletal Model", Department of Kinesiology and Sport Sciences, University of Miami, Fall 2015-Summer 2019 (Expected), by Jeonghoon Oh.
2. "Biomechanical and electromyographical comparison between recreationally trained weightlifters presenting with symmetrical and asymmetrical lumbopelvic-hip movement patterns in the back squat", Department of Kinesiology and Sport Sciences, University of Miami, Spring 2019 (Expected), by Lafayette Trey Watson.

Dissertation Committee Member (Completed):

1. "Hemodynamic and Hormonal Responses to an Exercise Test in Parkinson's Disease Patients without Orthostatic Hypotension", Department of Kinesiology and Sport Sciences, University of Miami, 2018, by Kirk Roberson.
2. "Effects of a Multimodal Walking Program on Physical Function and Quality of Life in Hematopoietic STEM Cell Transplant Patients", Department of Kinesiology and Sport Sciences, University of Miami, 2018, by Melanie Potiaumpai.
3. "Biomechanical Analysis of Accurately and Carefully Placing an Aerospace Avionics Box in Restricted Space", Department of Industrial Engineering, University of Miami, 2018, by Damon Stambolian.
4. "Middle East and North African International Students: Precollege Characteristics and Student Engagement", Department of Educational and Psychological Studies, University of Miami, 2018, by Mohamed Anis.
5. "Effect of Visual Feedback on the Attainment and Retention of Force Moderation in Laparoscopic Training", Department of Industrial Engineering, University of Miami, 2017, by Rafael Hernandez.
6. "Predicting Impact Severity to Motorcycle Helmets by Examining Residual Liner Deformation after Impact", Department of Industrial Engineering, University of Miami, 2017, by Stephanie Bonin.
7. "Decomposition Methods for In-Transit Freight Consolidation Problems", Department of Industrial Engineering, University of Miami, 2017, by Abdulkader Hanbazazah.
8. "Applications of Computational Modeling in the Biomechanical Assessment of Thoracolumbar Spine Surgeries", Department of Industrial Engineering, University of Miami, 2017, by Shady Elmasry.
9. "Investigation and Analysis of the Effect of Manual Lifting and Carrying Activities on Postural and Gait Stability in Normal Subjects", Department of Industrial Engineering, University of Miami, 2017, by Mohammed Alamoudi.
10. "Short-Term Forecasting of Electric Loads using Nonlinear Autoregressive Artificial Neural Networks with Exogenous Multivariable Inputs", Department of Industrial Engineering, University of Miami, 2017, by Jaime Buitrago.
11. "Optimizing Industrial Consumer Demand Response through Disaggregation, Hour-Ahead Pricing, and Momentary Autonomous Control", Department of Industrial Engineering, University of Miami, 2017, by Ahmed Abdulaal.
12. "A Game Theoretic Approach for Load-Shifting in the Smart Grid", Department of Industrial Engineering, University of Miami, 2017, by Eeyad Al-Ahmadi.
13. "Comparison of High-Velocity Training Using Plate-Loaded Vs. Pneumatic Machines on Strength, Power, and Physical Function in Older Adults", Department of Kinesiology and Sport Sciences, University of Miami, 2016, by Anoop Balachandran.
14. "The Role of Movement Complexity in Mediating The Effects of Exercise on Cognition", Department of Kinesiology and Sport Sciences, University of Miami, 2016, by Sean Nicolle.

15. "Effectiveness of a Proprioceptive Resistance Device in Changing Landing Style in Recreational Runners Learning to Land on the Ball of the Foot", Department of Kinesiology and Sport Sciences, University of Miami, 2016, by Connie Sol.
16. "Using a Humanoid Robot to Promote Healthy Eating Habits and Physical Activity in Elementary School-aged Children", Department of Dietetics and Nutrition, Florida International University (FIU), 2016, by Nadine Mikati.
17. "3D Ear Biometrics and Surveillance Video Based Biometrics", Department of Industrial Engineering, University of Miami, 2016, by Sayan Maity.
18. "Evaluation of Renewable Energy Policies using Agent-based Simulation", Department of Industrial Engineering, University of Miami, 2016, by Talal Alyamani.
19. "The Comparative Impacts of a Specifically Designed Yoga Program and Power Training on Physical and Functional Performance in Older Adults with Parkinson's Disease", Department of Kinesiology and Sport Sciences, University of Miami, 2015, by Meng Ni.
20. "Squat vs. Power Cleans: Postactivation Potentiation Effects in Division Track Athletes", Department of Kinesiology and Sport Sciences, University of Miami, 2015, by Hector Heredia-Vargas.
21. "The Comparative Effects of Treadmill Training Versus Multi-Directional Variable-Speed Training on Muscle Fiber Types, Daily Living and Executive Function in Elderly Men and Women", Department of Kinesiology and Sport Sciences, University of Miami, 2015, by Arturo Leyva.
22. "Identification of Sling Systems in Economical and Non-Economical Runners", Department of Kinesiology and Sport Sciences, University of Miami, 2015, by Nicole Rendos.
23. "A Multi-Objective Approach for Determining Optimal Air Compressor Location in a Manufacturing Facility", Department of Industrial Engineering, University of Miami, 2015, by Joel Zahlan.
24. "A Dynamic Adaptive Simulations Approach for Control and Optimization of Microgrids", Department of Industrial Engineering, University of Miami, 2015, by Aristotelis Thanos.
25. "The Effectiveness of Kinesio Tape and McConnell Tape on Neuromuscular Characteristics of VMO and VL Joint Kinematics and Pain in Individuals with and without PFPS During Functional Task", Department of Kinesiology and Sport Sciences, University of Miami, 2014, by Hyung-pil Jun.
26. "Bicycle Shoe Insoles and Their Effect on Foot Excursion, Leg Muscle Activation Patterns, and Performance in Experienced Cyclists", Department of Kinesiology and Sport Sciences, University of Miami, 2014, by Amos Cole Meyers.
27. "Short-Term Peak Demand Forecasting using an Artificial Neural Network with Controlled Peak Demand through Intelligent Electrical Loading", Department of Industrial Engineering, University of Miami, 2014, by Jason Grant.
28. "Demand Response-Enabled Model Predictive HVAC Load Control in Buildings Using Real-Time Electricity Pricing", Department of Industrial Engineering, University of Miami, 2013, by Mesut Avci.

Thesis Committee Member (Completed):

1. "Comparison of Ground Reaction Force in Treadmill Walking and in Overground Walking", Department of Industrial Engineering, University of Miami, 2012, by Fahad AlGheshyan.
2. "A Novel Algorithm for Creating Useful Hip Joint Center Location Estimates from Gait Motion", Department of Industrial Engineering, University of Miami, 2012, by James Soutelle.

Dissertation Committee Member (In progress):

1. "Effects of Anterior Cruciate Ligament Reconstruction using Quadriceps Autograft versus Bone Patellar Bone Autograft on Neuromuscular Activity of the Quadriceps and Gait Biomechanics", Department of Kinesiology and Sport Sciences, University of Miami, 2018-Present, by Michael Letter.
2. "The Effect of a High Intensity Interval Exercise Bout on Addictive Behaviors in Overweight/Obese Adults", Department of Kinesiology and Sport Sciences, University of Miami, 2017-Present, by Sarah Adwan.
3. "Biomechanical and Physiological Responses of Obese and Non-Obese During Different Manual Lifting Tasks", Department of Industrial Engineering, University of Miami, 2017-Present, by Nojoud Al Hakeem.
4. "Digging into Computational Thinking: Comparing the Effects of Everyday Reasoning and Programming Problems in a Primary School Robotics Curriculum", Department of Teaching and Learning, University of Miami, 2017-Present, by Guanhua Chen.

VII. Service

• **University Committee and Administrative Responsibilities:**

- Director – (2018, January - Present) The Exercise Physiology Undergraduate Program.
- Member – (2018, January - Present) The SEHD Undergraduate Curriculum Committee.
- Member – (2018) Search committee for the non-tenure Assistant Professor position (Strength and Conditioning), Department of Kinesiology and Sport Sciences.
- Faculty Marshal – (Spring 2018) Undergraduate Commencement Ceremony, University of Miami.
- Member – (2017, August - Present) The SEHD Educational Innovation Committee.
- Presenter-UM Section – (2017, January) The Cambridge Innovation Center Grand Opening Event.
- Chair – (2016, April – 2017, August) The SEHD Educational Innovation Committee.
- Judge – (2016) The Undergraduate Research, Creativity, Innovation Forum (RCIF).
- Member – (2015, August - Present) The SEHD Graduate Curriculum Committee.
- Co-Chair – (2015) Search committee for the tenure-track Assistant Professor position (Athletic Training), Department of Kinesiology and Sport Sciences.
- Judge – (2015) The Undergraduate Research, Creativity, Innovation Forum (RCIF).

- Member – (2014 - Present) The UHealth Sports Performance and Wellness Institute.
- Supervising Faculty Member – (2014, Summer) The University of Miami Honors Summer Research Program. Mentee: Gabriela Wagener, Senior, Pre-Physical Therapy.
- **Community and Public School Service:**
 - Laboratory Tours – (2017) Providing tours of the KIN Sports Medicine and Motion Analysis Laboratory to high school students, sponsored by the summer scholars program.
 - Presenter – Introducing NAO Humanoid Robot to the First Lego League robotics team. Eldersburg Elementary School, Maryland. 2015, January.
 - Presenter – Using Humanoid Robots in the Elementary Education. NOVA Blanche Forman elementary school, Ft. Lauderdale. 2014, June.
 - Presenter – NAO, the Interactive Robot. St. Mark's Episcopal school, Ft. Lauderdale. 2014, August.
 - Laboratory Tours – (2010-2015) Annual high-school students tours to the IEN Biomechanics and Computer-Aided Manufacturing Laboratories sponsored by the College of Engineering's E-Week and the Society of Women Engineers (SWE).