

Bio

PROFESSIONAL EDUCATION

- Doctor of Philosophy in Interdisciplinary Health Sciences, *The University of Texas at El Paso* (2022-Current).
 - Graduate Certificate in Applied Statistics (2022-Current)
- Master of Science in Kinesiology with a concentration in Clinical Exercise Physiology, *The University of Texas at El Paso* (2022).
 - Thesis title: The Effects of Eccentric Exercise on Blood Flow Patterns and Vascular Reactivity
- Bachelor of Science in Kinesiology with a concentration in Exercise Science, *The University of Texas at El Paso* (2020).

Research

Peer-review Publications (n=6, first author=1)

1. **Gomez, M.**, Montalvo, S., & Gurovich, A. N. (2022). Near Infrared Spectroscopy is not a Surrogate of Venous Occlusion Plethysmography to Assess Microvascular Resting Blood Flow and Function. *International journal of exercise science*, 15(2), 1616–1626. [PubMed](#)
2. Montalvo, S., **Gomez, M.**, Lozano, A., Arias, S., Rodriguez, L., Morales-Acuna, F., & Gurovich, A. N. (2022). Differences in Blood Flow Patterns and Endothelial Shear Stress at the Carotid Artery Using Different Exercise Modalities and Intensities. *Frontiers in physiology*, 13, 857816. <https://doi.org/10.3389/fphys.2022.857816> [PubMed](#)
3. Gurovich, A., Rodriguez, L.A., **Gomez, M.**, Caraveo, P., Ochoa, L., & Morales-Acuna, F. (2021). Imaging Ultrasound Assessment of Exercise-Induced Endothelial Shear Stress of the Brachial and Carotid Arteries. *Cardiopulmonary Physical Therapy Journal*. [CPTJ](#)
4. Waters, M., Miljkovic, B., Rascon, J., **Gomez, M.**, Gurovich, A. (2021) Effects of 1 MHz Therapeutic Ultrasound on Limb Blood Flow and Microvascular Reactivity: a randomized pilot trial. *International Journal of Environmental Research and Public Health*. [PubMed](#)
5. Gonzalez, M. P., Montalvo, S., Dietze-Hermosa, M., **Gomez, M.**, & Dorgo, S. (2023). A Comparison of Morphological, Jump, and Sprint Kinematic Asymmetries in Division I Track and Field Athletes. *International journal of exercise science*, 16(1), 1306–1319. [IJES](#)
6. MORENO, K., FERGUSON, C., GARCIA, V., **Gomez, M.**, & Gurovich, A. N. (2024). The Impact of the COVID-19 Pandemic and a Physical Therapy Program on Students' Health Outcomes. *International Journal of Exercise Science*, 17(3). [IJES](#)

Publications Under Review (4 total)

1. **Gomez, M.**, Montalvo, S., Conde, D., Ibarra-Mejia, Penailillo, L., Gurovich, A. Effects of Eccentric Cycling Exercise on Brachial Artery Endothelial Shear Stress and Blood Flow Patterns. Under review in *European Journal of Applied Physiology*.

2. Conde, D., Garcia, M., **Gomez, M.**, Gurovich, A. Quantification of Proteins and Genes Associated with Endothelial Cell Function after Different Shear Stress Intensities in vitro.
3. Montalvo, S., Gonzalez, M., Dietze-Hermosa, M., Martinez, A., Rodriguez, S., **Gomez, M.**, Ibarra-Mejia, G., Tan, E., Dorgo, S. Effects of Different Stretching Modalities on the Antagonist and Agonist Muscles on Isokinetic Strength and Vertical Jump Performance. Under review in Journal of Strength and Conditioning.
4. Gurovich, A., **Gomez, M.**, Montalvo, S. Synthetic 3D Model of the Carotid Artery to Study Exercise-Induced Changes in Endothelial Gene Expression. Under review in Frontiers in Physiology.

Publications in Preparation

1. **Gomez, M.**, Arias, S., Reyes, J., Ramirez, B., Gurovich, A. The Effects of Different High-Intensity Interval Training in Endothelial Function.
2. **Gomez, M.**, Montalvo, S., Conde, C., Ibarra-Mejia, G., Penailillo, L., Gurovich, A, The Effects of Eccentric Cycling in Vascular Reactivity.
3. **Gomez, M.**, Conde, D., Ibarra-Mejia, G., Gurovich, A. Maximal Eccentric Cycling Metabolic Demands Based on True Negative Work.

Guest Lectures

1. Exercise Testing: Why and How? Departamento de Ergonomia, *Universidad de Guadalajara, Guadalajara, Jalisco, Mexico, August 2022*
2. Exercise Testing: Why and How? Departamento de Ergonomia, *Universidad de Guadalajara, Guadalajara, Jalisco, Mexico, August 2023*
3. Oxygen Consumption: VO₂max and Energy Expenditure, Doctor of Physical Therapy Program, Department of Physical Therapy and Movement Sciences, *The University of Texas at El Paso, El Paso, Texas, October 2023*

Guest Speaker

1. Career Panelist. American Society for Biochemistry and Molecular Biology, *New Mexico State University, Las Cruces, New Mexico, November 2022*
2. Career Panelist. American Society for Biochemistry and Molecular Biology, *New Mexico State University, Las Cruces, New Mexico, November 2023*
3. Career Panelist. Department of Kinesiology, *Augusta University, Augusta, Georgia, March 2024*

Books

1. Rohrer, A., Conde, D., Montalvo, S., **Gomez, M.**, Juarez, J., Ibarra-Mejia, G. (2022). Changes in Lactate After the Completion of Repetitive Cycle Exercises with and without Compression Arm Sleeves. In: Ravindra S. Goonetilleke and Shuping Xiong (eds) Physical Ergonomics and Human Factors. AHFE (2022) International Conference. AHFE Open Access, vol 63. AHFE International, USA. <http://doi.org/10.54941/ahfe1002617>
2. **Gomez, M.**, Conde, D., Montalvo, S., Ibarra-Mejia, G., Differences in circulating Cortisol Levels After Completing Hand Ergometer Exercise with and Without Graded Compression Arm Sleeves. [10.54941/ahfe1003954](http://doi.org/10.54941/ahfe1003954)

Peer-Review Conference Proceedings (38 total)

1. **Manuel Gomez**, Bailey Ramirez, Daniel Conde, Gabriel Ibarra-Mejia, Alvaro N. Gurovich. Eccentric Cycling Metabolic Demand Based on True Negative Work. *American College of Sports Medicine (2024)*.

2. Bailey R. Ramirez, **Manuel Gomez**, Daniel Conde, Alejandro Sanchez, Josue Reyes, Esther Afandigeh, Alvaro N. Gurovich. Acute Effects of High-Intensity Interval Training and Continuous Aerobic Exercise in Vascular Reactivity. *American College of Sports Medicine*(2024)
3. **Gomez, M.**, Montalvo, S., Sanchez., A., Hassan, P., Gurovich, A. Biomechanical Characteristics of the Carotid Artery During Aerobic Exercise. American College of Sports Medicine Conference (2023).
4. **Gomez, M.**, Montalvo, S., Sanchez., A., Hassan, P., Gurovich, A., Biomechanical Characteristics of the Carotid Artery During Aerobic Exercise. Texas American College of Sports Medicine Conference (2023). <https://digitalcommons.wku.edu/ijesab/vol2/iss15/109/>
5. Sanchez, A., **Gomez, M.**, Montalvo, S., Lozano, A., Arias, S., Gurovich, A., The Effects of Different Intensities on Eccentric Cycling Blood Flow Patterns at a Concentric Cycling Workload Match. Texas American College of Sports Medicine Conference (2023). <https://digitalcommons.wku.edu/ijesab/vol2/iss15/98/>
6. **Gomez, M.**, Montalvo, S., Lozano, A., Arias, S., & Gurovich, A. N. Brachial artery blood flow patterns during eccentric cycling exercise. American College of Sports Medicine 2022 Conference.
7. Arias, S., Montalvo, S., **Gomez, M.**, Lozano, A., Hassan, P. F., & Gurovich, A. N. Differences in Blood-Flow Patterns of the Carotid Artery between two exercise modalities at three exercise intensities. American College of Sports Medicine 2022 Conference.
8. Rohrer, R. A., Conde, A. D., Juarez, L. J., Montalvo, S., **Gomez, M.**, & Ibarra-Mejia, G. Changes in Lactate After the Completion of Repetitive Cycle Exercises with and without Compression Arm Sleeves. 13th International Conference on Applied Human Factors and Ergonomics. 2022.
9. Alondra Lozano, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Progra F. Hassan, Alvaro Gurovich. Differences in Blood-Flow Patterns of the Carotid Artery between three Aerobic Exercise Modalities. (2022) UTEP DISCOVER 2022: COURI Summer Symposium Abstracts.
10. Carlos De La Rosa, **Manuel Gomez**, Samuel Montalvo, Sabrina Arias, Alondra Lozano, Corina Arroyo, Alvaro Gurovich. Early vascular aging, oxidative stress, and mental health in individuals recovering from Covid-19. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
11. Corina Arroyo, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Carlos de la Rosa, Alondra Lozano, Alvaro Gurovich. Differences in the carotid artery shear stress between three intensities of the bench press and arm crank. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts
12. Alondra Lozano, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Carlos de la Rosa, Corina Arroyo, Alvaro Gurovich. Comparison of carotid endothelial shear stress across three resistance training modalities and intensities. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
13. Sabrina Arias, Samuel Montalvo, **Manuel Gomez**, Carlos de la Rosa, Alondra Lozano, Corina Arroyo, Alvaro Gurovich. Differences of the carotid artery between three intensities of the back squat and running treadmill. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
14. **Manuel Gomez**, Cesar Meza, Mario Garcia, Catalina De La Pena, Sudip Bajpeyi. The effects of a single bout of endurance exercise on glucose transporter 4 (GLUT4) *COURI Symposium Abstracts, Summer 2018*
15. **Manuel Gomez**, Cesar Meza, Mario Garcia, Catalina De La Pena, Sudip Bajpeyi. The effects of a single bout of endurance exercise on glucose transporter 4 (GLUT4). Texas College of Sports Medicine (TACSM). <https://digitalcommons.wku.edu/ijesab/vol2/iss11/68/>

16. Cesar Meza, Mario Garcia, Jeremy Serrano, **Manuel Gomez**, Manuel Amador, Andrew McAinch, Sudip Bajpeyi. The role of circulating miRNA-29a in exercise training-induced improvements in insulin sensitivity. *Experimental Biology*, April 6-9, 2019, Orlando, FL.
17. **Manuel Gomez**, Samuel Montalvo, Alondra Lozano, Sabrina Arias, Alvaro N. Gurovich. Brachial artery blood flow patterns during eccentric cycling exercise. *American College of Sports Medicine* (2022)
18. Alondra Lozano, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Progga F. Hassan, Alvaro N. Gurovich. Differences In Blood-Flow patterns of the Carotid Artery Between Three Aerobic Exercise Modalities. *American College of Sports Medicine* (2022)
19. Sabrina Arias, Samuel Montalvo, **Manuel Gomez**, Alondra Lozano, Progga F. Hassan, Alvaro N. Gurovich. Differences In Blood-Flow patterns Of the Carotid Artery Between Two Exercise Modalities at Three Intensities. *American College of Sports Medicine* (2022)
20. Progga f. Hassan, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Alondra Lozano, Alvaro N. Gurovich. Differences in Blood-Flow Patterns In The Carotid Artery Between The Bench Press and Arm Crank. *American College of Sports Medicine* (2022)
21. Andrea Rico, Mariana Guerrero, Lisa Rodriguez, Aaron Keller, **Manuel Gomez**, Jessica Maddox, Francisco Morales-Acuna, Alvaro N. Gurovich. NIRS reliability measuring microvascular blood flow in the upper extremity
22. Elizabeth Trujillo, **Manuel Gomez**, Lisa Rodriguez, Janeth Juarez, Francisco Morales-Acuna, Alvaro Gurovich. Validation of NIRS Under Resting and Post-Ischemic Conditions in the Lower Extremity
23. Jozelyn Rascon, Alvaro Gurovich, Francisco Morales-Acuna, **Manuel Gomez**, Janeth Juarez. Differences in tissue oxygenation and microvascular blood flow between sexes
24. **Manuel Gomez**, Mario Garcia, Daniel Conde, Francisco Morales-Acuna, Alvaro Gurovich. Effects of low-intensity exercise-induced shear stress on carotid artery eNOS gene expression
25. Daniel Conde, **Manuel Gomez**, Mario Garcia, Francisco Morales-Acuna, Alvaro N. Gurovich. Effects of in-vitro exercise-induced endothelial shear stress on adhesion molecule gene expression. *FASEB JOURNAL* 34 (2020)
26. **Manuel Gomez**, Francisco Morales-Acuna, Lisa Rodriguez, Paulina Caraveo, Alvaro N. Gurovich. Endothelial shear stress in the common carotid artery during boxing training in prehypertension. *FASEB JOURNAL* 34 (2020)
27. Francisco Morales-Acuna, **Manuel Gomez**, Lisa Rodriguez, Alvaro N. Gurovich. Effects Of Boxing Training On Peripheral And Central Blood Pressure And Arterial Stiffness In Prehypertension. *Medicine & Science in Sports & Exercise* 52 7S (2020)
28. Paulina Caraveo, Francisco Morales-Acuna, Andrea Rico, Carlos Reuben Gajardo, **Manuel Gomez**, Lisa Rodriguez, Alvaro N. Gurovich. Boxing Training Effects On Brachial And Popliteal Endothelial Function In Prehypertensive Individuals
29. Enrique A. Sosa, Francisco Morales-Acuna, **Manuel Gomez**, Lisa Rodriguez, Paulina Caraveo, Janeth Juarez, Alvaro N. Gurovich. Vo 2 Max And Ventilatory Threshold Comparison Between Boxing And Arm-crank Exercise Tests. *Medicine & Science in Sports & Exercise* 52 7S (2020)

30. Janeth Berenice Juarez Aguilera, Rosa E. Lara Fuentes, Francisco Morales-Acuna, Karla Irigoyen, **Manuel Gomez**, Alvaro N. Gurovich. Boxing Training Effects On Cardiorespiratory Fitness In Individuals With Prehypertension. *Medicine & Science in Sports & Exercise* 52 7S (2020)
31. Karla F. Carrillo, Francisco Morales-Acuna, **Manuel Gomez**, Lisa Rodriguez, Paulina Caraveo, Alvaro N. Gurovich. Endothelial Shear Stress In The Common Carotid Artery During Boxing Training. *Medicine & Science in Sports & Exercise* 52 7S (2020)
32. **Manuel Gomez**, Francisco Morales-Acuna, Alvaro N. Gurovich Comparison Of Oxyhemoglobin, Deoxyhemoglobin, Tissue Oxygen Saturation, And Venous Occlusion Plethysmography. *Medicine & Science in Sports & Exercise* 52 7S (2020)
33. Megan Waters, **Manuel Gomez**, Alvaro N. Gurovich. Effects of 1 MHz Therapeutic Ultrasound on Limb Blood Flow and Microvascular Reactivity
34. Carlos De La Rosa, **Manuel Gomez**, Samuel Montalvo, Sabrina Arias, Alondra Lozano, Corina Arroyo, Alvaro Gurovich. Early vascular aging, oxidative stress, and mental health in individuals recovering from Covid-19. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
35. Corina Arroyo, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Carlos de la Rosa, Alondra Lozano, Alvaro Gurovich. Differences in the carotid artery shear stress between three intensities of the bench press and arm crank. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
36. Alondra Lozano, Samuel Montalvo, **Manuel Gomez**, Sabrina Arias, Carlos de la Rosa, Corina Arroyo, Alvaro Gurovich. Comparison of carotid endothelial shear stress across three resistance training modalities and intensities. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts..
37. Sabrina Arias, Samuel Montalvo, **Manuel Gomez**, Carlos de la Rosa, Alondra Lozano, Corina Arroyo, Alvaro Gurovich. Differences of the carotid artery between three intensities of the back squat and running treadmill. (2021) UTEP DISCOVER 2021: COURI Summer Symposium Abstracts.
38. Amber Rohrer, Daniel Conde, Jennica Juarez, Samuel Montalvo, **Manuel Gomez**, Gabriel Mejia-Ibarra. Changes in Lactate After the Completion of Repetitive Cycle Exercises with and without Compression Arm Sleeves. (2022) International Conference on Applied Human Factors and Ergonomics (AHFE).

Grants Awarded

1. College of Health Sciences – Applied and Translational Research Fund Project Title: Neuromuscular electrical stimulation (E-Stim) – A novel strategy to improve insulin insensitivity Investigator(s): Sudip Bajpeyi (PI), Jeffrey D. Eggleston, Jason B. Boyle, Sandor Dorgo, Harry J. Meeuwesen, Amy Wagler, Andrew McAinch, Jasmin Jenkins, Michelle Galvan, Manuel Gomez. Role: Undergraduate Assistant. Amount Awarded: \$7,500

Programs Applied

1. American College of Sports Medicine; Leadership & Diversity Training Program (2022). LDTP was created to promote career success through mentoring. (2023 – Current) **Mentor: Jennifer Bunn, Ph.D., FACSM**
2. American College of Sports Medicine; Leadership & Diversity Training Program (2023). LDTP was created to promote career success through mentoring. 2024 - 2025 (Not accepted)

Professional Certifications and Memberships

Professional Certifications

- Dual X-Ray Absorptiometry Operator (2022-Present).
- CPR and AED Certified (2013-present), (AHA certified)

Professional Memberships

- American College of Sports Medicine
- Texas American College of Sports Medicine
 - Nominated for Student Representative (2023): Not awarded

Awards

Scholarships and Assistantships

- Graduate Research Associate Assistantship. *The University of Texas at El Paso*. (2022- Current)
- Research Technician, Doctor of Physical Therapy Program, Rehabilitation Science Department, *The University of Texas at El Paso* (September 1st, 2021-August 31st, 2022).
- Teaching Assistant, Public Health Department, *The University of Texas at El Paso* (September 1, 2020- June 1, 2021).

Conference Awards

- Texas American College of Sports Medicine (TACSM). Waco, Texas. (2024). Manuscript Award, First Place. *Effects of Eccentric Cycling on Brachial Artery Endothelial Shear Stress and Blood Flow Patterns*

Leadership

Student Service

Clinical Applied Physiology Research Association

Role: Member (2023-Present)

Student Mentorship

Student: Alejandro Sanchez

Main Advisor: Alvaro Gurovich, PT., Ph.D., FACSM

Project Title: Assessing Resistance Vasculature Function in the Elderly

Student: Carmen Rodriguez

Main Advisor: Gabriel Ibarra-Mejia, M.D., Ph.D.

Project Title: Upper Extremity Tendon miRNA Expression and Identification after Hand Gripping Task with Restricted Venous Blood Return Flow

Student: Omar Cano

Main Advisor: Gabriel Ibarra-Mejia, M.D., Ph.D.

Projects: Thesis in development

Student: Sandra Rivera

Main Advisor: Gabriel Ibarra-Mejia, M.D., Ph.D.

Projects: Thesis in development

Student: Josedelle Guerra

Main Advisor: Gabriel Ibarra-Mejia, MD, Ph.D.

Projects: Thesis in development

Student: Dilma Castillo

Main Advisor: Gabriel Ibarra-Mejia, MD, Ph.D.

Projects: Tendonopathies visualization under electron microscope

Under the formal supervision of my mentors, Alvaro N. Gurovich and Gabriel Ibarra-Mejia, I was able to assist in the development of the Clinical Applied Physiology (CAPH) and Bio-Ergonomics Laboratory, respectively. As part of the team leader of both laboratories, I mentored undergraduate and graduate students on several tasks including idea development and conceptualization of their thesis or individual projects, research design and statistical test selection, data collection, analysis, interpretation of results, along with finalizing their manuscripts and/or abstracts.

Master Students

Omar Cano (2022)

Sandra Rivera (2022)

Dilma Castillo (2023)

Josdelle Guerra (2023)

Undergraduate Students

Jennica Juarez (2021)

Alondra Lozano (2021)

Carlos de la Rosa (2021)

Corina Arroyo (2021)

Sabrina Arias (2021)

Alejandro Sanchez (2022)

Pedro Martinez (2021)

Carlos De La Rosa (2021)

Josue Reyes (2023)

Jorge De Castro (2023)

Esther Afangideh (2022)

Bailey Ramirez (2023)

Steven Alva (2024)

Julian De Lucio (2024)

Jesus Gonzalez (2024)

Carolina Barron (2024)

Current projects

1. Synthetic 3D Model of the Carotid Artery to Study Exercise-Induced Changes in Endothelial Gene Expression
2. Exercise-Induced Blood Flow Patterns in Patients with Coronary Artery Disease
3. Assessing Resistance Vasculature Function in the Elderly
4. Changes in Muscular Function, Strength, and Pain Pressure Threshold Associated with Static and Dynamic Stretching
5. Upper Extremity Tendon miRNA Expression and Identification after Hand Gripping Task with Restricted Venous Blood Flow Return