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GUILHERME MANNA CESAR

Curriculum Vitae

EDUCATION

2015 – 2015 **Postdoctoral Research Fellowship**. Department of Athletics.
University of Nebraska–Lincoln, Lincoln, NE, USA.
Director: Judith M. Burnfield, PhD, PT.

2009 – 2014 **PhD Biokinesiology**.
University of Southern California, Los Angeles, CA, USA.
Dissertation: Development of postural strategies for the control of forward momentum.
Co-Chairs: Susan M. Sigward, PhD, PT, ATC; James Gordon, EdD, PT, FAPTA.

2007 – 2008 **Master of Science in Physical Therapy**.
Federal University of São Carlos, São Carlos, SP, Brazil.
Thesis: Menstrual cycle influence on knee electromyographic activity and kinematics during the single leg drop landing.
Advisor: Fábio Viadanna Serrão, PhD, PT.

2004 – 2006 **Bachelor of Science in Physical Therapy**.
University of Mogi das Cruzes, Mogi das Cruzes, SP, Brazil.
Thesis: Electromyography of vastus medialis oblique with tibial rotation during open kinetic chain knee extension.
Advisor: Daniela Aparecida Biasotto-Gonzalez, PhD, PT.

1999 – 2001 **Bachelor of Arts in Kinesiology**.
Christian Heritage College, San Diego, CA, USA.

1997 – 1999 **Associate Degree in Sciences**.
Grossmont Community College, San Diego, CA, USA.

POSITIONS

2022 – Present Assistant Professor. Department of Physical Therapy, Brooks College of Health. University of North Florida, Jacksonville, FL.

2020 – 2022 Adjunct Graduate Faculty. Department of Physical Therapy, School of Health Sciences. University of South Dakota, Vermillion, SD.

2020 – 2022 Adjunct Assistant Professor. Department of Ph ysical Medicine and Rehabilitation, College of Medicine. University of Nebraska Medical Center, Omaha, NE.

2016 – 2022 Assistant Research Director of the Movement and Neurosciences Center. Institute for Rehabilitation Science and Engineering. Madonna Rehabilitation Hospitals, Lincoln, NE.

2015 – 2015	Coordinator, Sports Biomechanics Research Volunteer Program. Nebraska Athletic Performance Laboratory. University of Nebraska–Lincoln, Lincoln, NE, USA.
2012 – 2013	Research Assistant. Division of Biokinesiology and Physical Therapy. University of Southern California, Los Angeles, CA.
2009 – 2014	Graduate Teaching Assistant, Doctor of Physical Therapy. Division of Biokinesiology and Physical Therapy. University of Southern California, Los Angeles, CA.
2009 – 2009	Instructor of Record. Biological Dysfunctions, Physical Activity and Health. Department of Physical Education. University Centro Universitario Claretiano, Batatais, SP, Brazil.
2007 – 2009	Physical Therapy Orthopedic Private Practice. Mogi das Cruzes, SP, Brazil.
2004 – 2006	Undergraduate Teaching Assistant, Kinesiology. Department of Physical Therapy, University of Mogi das Cruzes, Mogi das Cruzes, Brazil.
1994 – 1996, 2001 – 2004	Professional Basketball Athlete. • Sport Club Corinthians Paulista, Sao Paulo, SP, Brazil. • Valtra Tratores, Mogi das Cruzes, SP, Brazil. • Sociedade Esportiva Palmeiras, Sao Paulo, SP, Brazil.

AWARDS

2024	Brooks College of Health Excellence in Scholarship Award. University of North Florida, Jacksonville, FL.
2022	American Physical Therapy Association, Academy of Pediatric Physical Therapy. *Pediatric Physical Therapy* Journal Mentored Writing Scholarship Award. Junior Faculty Mentee: Debra Depto-Hoffman, PT, DPT, PCS.
2017	Training in Grantsmanship for Rehabilitation Research (TIGRR) Workshop, National Center for Medical Rehabilitation Research at NIH, Medical University of South Carolina, Charleston, SC.
2012	Award for Excellence in Teaching in the category of Biokinesiology and Physical Therapy, Doctor of Physical Therapy Program, academic year 2012-2013. University of Southern California, Los Angeles, CA.
2012	Outstanding Mentorship Award, Division of Biokinesiology and Physical Therapy, Doctor of Physical Therapy Program, University of Southern California, Los Angeles, CA.

2006	Honorable Mention. Poster presentation at the III International Dental Congress, Piracicaba Dental School, State University of Campinas, Campinas, SP, Brazil.
2001	Outstanding Senior Sports Medicine Student Award, Christian Heritage College, San Diego, CA.
2000 – 2001	National Christian College Athletic Association (NCCAA) Scholar-Athlete Award.
2000 – 2001	National Association of Intercollegiate Athletics (NAIA) Men's Basketball Scholar-Athlete Award.
2001	Christian Heritage College Athletic Program Senior Award, San Diego, CA.
1999 – 2001	All-Golden State Athletic Conference Scholar Athlete Award.

PUBLICATIONS

MANUSCRIPTS IN PEER-REVIEWED JOURNALS

* Undergraduate students directly involved with mentorship
** Graduate students directly involved with mentorship

1. **Cesar GM**, Buster TW, Burnfield JM (2024). Lower extremity muscle activity during reactive balance differs between adults with chronic traumatic brain injury and controls. *Frontiers in Neurology*. 15:1432293. DOI: 10.3389/fneur.2024.1432293.

2. **Cesar GM**, Giebler M**, Buster TB, Burnfield JM. Balance assessment during decreased base of support for children with disabilities. *Clinical and Experimental Pediatrics*. Accepted July, 2024.

3. Mohammadzadeh Gonabadi A, Buster TW, **Cesar GM**, Burnfield JM (2024). Effect of data and gap characteristics on the nonlinear calculation of motion during locomotor activities. *Journal of Applied Biomechanics*. Ahead of Print. DOI: 10.1123/jab.2023-0283.

4. Melton ML**, Shim AL, Ross M, **Cesar GM** (2024). The acute effects in postural sway as a result of self-myofascial release on the lower extremities in collegiate female athletes. *International Journal of Exercise Science*, 17(1):274-284. PMID: 38665168. PMCID: PMC11042852.

5. Bedo BLS, **Cesar GM**, Soares WTE**, Catelli DS, Marques JB**, Gomes MM, Santiago PRP (2023). The influence of athletic background, lower limb dominance, and cutting angle on center-of-mass kinematics during a sidestep cutting task. *Brazilian Journal of Motor Behavior*, 17(1):39-47. DOI: 10.20338/bjmb.v17i1.294.

6. Hao Jie**, Buster TW, **Cesar GM**, Burnfield JM (2023). Virtual reality augments effectiveness of treadmill walking training in patients with walking and balance impairments: A systematic review and meta-analysis of randomized controlled trials. *Clinical Rehabilitation*, 37(5):603-619. DOI: 10.1177/02692155221138309.

7. Andrade ACF**, Catelli DS, Bedo BLS, **Cesar GM**, Santos TF**, Junqueira EB, Santiago PRP (2022). Association between the strength of flexor hallucis brevis and abductor hallucis and foot mobility in recreational runners. *Biomechanics*, 2(4):613-622. DOI: 10.3390/biomechanics2040048.

8. Feehan M*, Shim A, **Cesar GM**, Burggraff A (2022). Is there a relationship between foot reaction time and ankle frontal plane torque in female soccer athletes? A pilot study. *International Journal of Exercise Science*, 15(1):1506-1513. PMID: 36620327. PMCID: PMC9797005.

9. **Cesar GM**, Buster TW, Mohammadzadeh Gonabadi A, Burnfield JM (2022). Muscle demand and kinematic similarities between pediatric-modified motor-assisted elliptical training at fast speed and fast overground walking: Real-world implications for pediatric gait rehabilitation. *Journal of Electromyography and Kinesiology*, 63:102639. DOI: 10.1016/j.jelekin.2022.102639.

10. Mohammadzadeh Gonabadi A, **Cesar GM**, Buster TW, Burnfield JM (2022). Effect of gap-filling technique and gap location on linear and nonlinear calculations of motion during locomotor activities. *Gait and Posture*, 94:85-92. DOI: 10.1016/j.gaitpost.2022.02.025.

11. Bedo BLS**, **Cesar GM**, Andrade VL**, Moura FA, Vieira LHP**, Aquino R, Domingos MB*, Santiago PRP (2022). Landing mechanics of basketball and volleyball athletes: A kinematic approach. *Human Movement*, 23(1):80-88. DOI: 10.5114/hm.2021.104189.

12. Bedo BLS**, **Cesar GM**, Vieira AM**, Vieira LHP**, Catelli DS, Andrade VL**, Santiago PRP (2022). Knee joint kinematics during the sidestep maneuver in professional futsal athletes: Effect of sport-specific sidestep cutting. *Science and Sports*, 37(3):213.e1-213.e8. DOI: 10.1016/j.scispo.2021.03.013.

13. **Cesar GM**, Buster TW, Burnfield JM (2021). Test-Retest reliability and minimal detectable change of the computerized dynamic posturography PROPRIO for adults with chronic traumatic brain injury. *Disability and Rehabilitation*, 43(14):2038-2044. PMID: 31724889. DOI: 10.1080/09638288.2019.1688872.

14. Burnfield JM, **Cesar GM**, Buster TW (2021). Feasibility of motor-assisted elliptical to improve walking, fitness and balance following pediatric acquired brain injury: A case series. *Journal of Pediatric Rehabilitation Medicine*, 14(3):539-551. DOI: 10.3233/PRM-200717.

15. Bedo BLS**, **Cesar GM**, Moraes R, Mariano FP**, Vieira LHP**, Andrade VL**, Santiago PRP (2021). Influence of side uncertainty on knee kinematics of female handball athletes during sidestep cutting maneuvers. *Journal of Applied Biomechanics*, 37(3):188-195. DOI: 10.1123/jab.2020-0141.

16. **Cesar GM**, Buster TW, Burnfield JM (2020). Comparison of plantar pressure profiles of young adults during training on elliptical devices and overground walking: A pilot study. *The Foot*, 45:101716. DOI: 10.1016/j.foot.2020.101716.

17. Burnfield JM, **Cesar GM**, Buster TW (2020). Variations in plantar pressure variables across elliptical trainers in older adults. *Clinical Biomechanics*, 80:105142. DOI: 10.1016/j.clinbiomech.2020.105142.

18. **Cesar GM**, Buster TW, Burnfield JM (2020). Cardiorespiratory fitness, balance and walking improvements in an adolescent with cerebral palsy (GMFCS II) and autism after motor-assisted elliptical training. *European Journal of Physiotherapy*, 22(3):124-132. DOI: 10.1080/21679169.2018.1536764.

19. Burnfield JM, **Cesar GM**, Buster TW, Irons SL, Pfeifer CM (2018). Walking and fitness improvements in child with diplegic cerebral palsy following motor-assisted elliptical intervention. *Pediatric Physical Therapy*, 30(4):E1-E7. DOI: 10.1097/PEP.0000000000000541.

20. Burnfield JM, Buster TW, Pfeifer CM, Irons SL, **Cesar GM**, Nelson CA (2018). Adapted motor-assisted elliptical for rehabilitation of children with physical disabilities. *ASME Journal of Medical Devices*, 13(1):011006. DOI: 10.1115/1.4041588.

21. Pfeifer CM, Rowen D*, Buster TW, **Cesar GM**, Irons SI, Burnfield JM (2018). Design and validation of a heart rate and speed monitoring device with the ICARE. *ASME Journal of Medical Devices*, 13(1):015002. DOI: 10.1115/1.4041337.

22. Burnfield JM, Pfeifer CM, Kwapiszeski S*, Irons SI, Buster TW, **Cesar GM** (2018). Impact of *ICARE* training speed and motor-assistance on cardiovascular response. *Cardiopulmonary Physical Therapy Journal*, 30(3):115-122. DOI: 10.1097/CPT.0000000000000098.

23. Berg-Poppe P, **Cesar GM**, Tao H, Johnson C**, Landry J** (2018). Concurrent validity between a portable force plate and an instrumented walkway when measuring limits of stability. *International Journal of Therapy and Rehabilitation*, 25(6):272-278. DOI: 10.12968/ijtr.2018.25.6.272.

24. **Cesar GM**, Lewthwaite R, Sigward S (2018). Effects of practice on the control of whole-body momentum in active children and adults. *Journal of Motor Learning and Development*, 6(1):185-196. DOI: 10.1123/jmld.2017-0008.

25. **Cesar GM**, Buster TW, Burnfield JM (2017). Should gait outcomes be the primary focus in pediatric gait rehabilitation? *Journal of Novel Physiotherapies*, 7:342. DOI: 10.4172/2165-7025.1000342.

26. **Cesar GM**, Pfeifer CM, Burnfield JM (2017). 3-Dimensional versus 2-dimensional comparison of knee valgus collapse during vertical jump: Clinical implications for ACL risk of injury assessment. *Journal of Sports Medicine and Therapy*, 2:32-38. DOI: 10.29328/journal.jsmt.1001006.

27. **Cesar GM**, Edwards H*, Hasenkamp R, Burnfield JM (2017). Prediction of athletic performance of male and female athletes measured by triple hop for distance. *Trends in Sport Sciences*, 1(24): 19-25.

28. Burnfield JM, **Cesar GM**, Buster TW, Irons SL, Nelson CA (2017). Kinematic and muscle demand similarities between motor-assisted elliptical training and walking: Implications for pediatric gait rehabilitation. *Gait and Posture*, 51:194-200. DOI: 10.1016/j.gaitpost.2016.10.018.

29. Pfeifer CM, Burnfield JM, Twedt MH*, **Cesar GM**, Hawks JA (2016). Video capture and post processing technique for approximating 3D projectile trajectory. *Sports Technology*, 8(3-4):124-129. DOI: 10.1080/19346182.2016.1248974.

30. **Cesar GM**, Tomasevicz C**, Burnfield JM (2016). Frontal plane comparison between drop jump and vertical jump: Implications for the assessment of ACL risk of injury. *Sports Biomechanics*, 15(4):440-449. DOI: 10.1080/14763141.2016.1174286.

31. **Cesar GM**, Sigward S (2016). Dynamic stability during running gait termination: Predictors for successful control of forward momentum in children and adults. *Human Movement Science*, 48:37-43. DOI: 10.1016/j.humov.2016.03.014.

32. Vieira LH, Doğramaci SN, Barbieri RA, Milioni F, Moura FA, Andrade VL, **Cesar GM**, Santiago PRP (2016). Preliminary results on organization on the court, physical and technical performance of Brazilian professional futsal players: Comparison between friendly pre-season and official match. *Motriz*, 22(2):79-91. DOI: 10.1590/S1980-6574201600020011.

33. Lawrence EL, **Cesar GM**, Bromfield M**, Peterson R**, Valero-Cuevas F, Sigward S (2015). Strength, multijoint coordination, and sensorimotor processing are independent contributors to overall balance ability. *BioMed Research International*, 2015:561243. DOI: 10.1155/2015/561243.

34. **Cesar GM**, Sigward S (2015). Dynamic stability during running gait termination: Differences in strategies between children and adults to control forward momentum. *Human Movement Science*, 43:138-145. DOI: 10.1016/j.humov.2015.08.005.

35. Sigward SM, **Cesar GM**, Havens KL (2015). Predictors of frontal plane knee moments during side-step cutting to 45 and 110 degrees in men and women: Implications for Anterior Cruciate Ligament injury. *Clinical Journal of Sport Medicine*, 25(6):529-534: DOI: 10.1097/JSM.0000000000000155. PMCID: PMC4387120.

36. Biasotto-Gonzalez DA, Sousa DFM, Herpich CM, Gloria IPS, Hage YE, Bussadori SK, **Cesar GM**, Gadotti IC, Gonzalez TO (2012). Assessment of occlusal contact in pre and post Global Posture Re-education treatment: A pilot study. *Manual Therapy, Posturology & Rehabilitation Journal* (formerly *Revista Terapia Manual*), 50:528-532.

37. **Cesar GM**, Pereira VS*, Santiago PR, Benze BG, da Costa PH, Amorim CF, Serrão FV (2011). Variations in dynamic knee valgus and gluteus medius onset timing in non-athletic females related to hormonal changes during the menstrual cycle. *The Knee*, 18(4):224-230. DOI: 10.1016/j.knee.2010.05.004.

38. Biasotto-Gonzalez DA, Hage YE, Gomes CAFP, Amaral AP, **Cesar GM**, Bussadori SK, Gonzalez TO (2011). Follow-up treatment in mandible fractures: A case report. *Manual Therapy, Posturology & Rehabilitation Journal* (formerly *Revista Terapia Manual*), 9:284-285.

39. Mochida LY, **Cesar GM**, Santiago PRP, Lobo da Costa PH (2009). Dynamometric study of elderly gait during obstacle negotiation. *Brazilian Journal of Physical Education and Sport*, 23(1):15-23 (In Portuguese).

40. Cesar GM, Pereira VS*, Serrão FV (2008). Influence of sex hormones on ACL laxity and injury: Literature review. *Physical Therapy in Movement*, 21(3):93-100. (In Portuguese).

41. Cesar GM, Tosato JP, Biasotto-Gonzalez DA (2006). Correlation between occlusion and cervical posture in patients with bruxism. *Compendium of Continuing Education in Dentistry*, 27(8):463-467. PMID: 16955718.

42. Cesar GM, Tosato JP, Gonzalez TO, Biasotto-Gonzalez DA (2006). Cervical posture and occlusal classes in bruxists and TMD asymptomatic individuals. *Revista de Odontologia da Universidade Cidade de São Paulo*, 18(2):155-60 (In Portuguese).

43. Cesar GM, Pinheiro HFS*, Rodrigues KL*, Tosato JP, Biasotto-Gonzalez DA (2006). Relationship between sleeping postures and temporomandibular dysfunction. *Revista Brasileira de Odontologia*, 63(1-2):110-2 (In Portuguese).

44. Cesar GM, Biasotto-Gonzalez DA, Gonzalez TO (2006). Cross-sectional study of the quality of life and functional capacity of young basketball athletes. *Revista Treinamento Desportivo*, 7(1):58-61 (In Portuguese).

45. Cesar GM, Tosato JP (2006). Effect of articular mobilization in patients with mandibular range of motion limitation. *Manual Therapy, Posturology & Rehabilitation Journal* (formerly *Revista Terapia Manual*), 3(14):558-561. (In Portuguese).

46. Cesar GM, Tosato JP, Biasotto-Gonzalez DA, Gonzalez TO, Caria PHF (2006). Descriptive analysis of temporomandibular dysfunction symptoms. *Revista Brasileira de Odontologia*, 63(3-4):167-170 (In Portuguese).

47. Tosato JP, **Cesar GM**, Biasotto-Gonzalez DA (2005). Relationship between vertebral pain and pain in the temporomandibular joint. *Manual Therapy, Posturology & Rehabilitation Journal* (formerly *Revista Terapia Manual*), 3(12):450-2 (In Portuguese).

48. Tosato JP, **Cesar GM**, Biasotto-Gonzalez DA (2005). Relationship between mandibular hypermobility and systemic hypermobility. *Revista Reabilitar*, 7(29):42-5 (In Portuguese).

MANUSCRIPTS UNDER REVIEW IN PEER-REVIEWED JOURNALS

1. Charalambous CC, Espinoza-Wade ER, **Cesar GM**, Gerger M, Lai YH, Winstein CJ (2024). Limb choice for goal-directed stepping is primarily influenced by the motor effort rather than expected success: A preliminary investigation in neurotypical adults. ***Experimental Brain Research***. Submitted April 2024. BioRxiv PrePrint Server: https://www.biorxiv.org/content/10.1101/2024.04.10.588947v1.

2. Depto-Hoffman D, **Cesar GM**. Reactive balance control following selective dorsal rhizotomy in child with diplegic cerebral palsy. ***Case Reports in Pediatrics***. Submitted April 2024.

3. Aceros J, **Cesar GM**, Rodriguez A, Lundy M. The effects of family directed power mobility on self-care, mobility, and social function in very young children with severe multiple developmental impairments. ***Disability and Rehabilitation: Assistive Technology***. Submitted August 2024.

4. **Cesar GM**, Mochida LY, McDonald K**, Monteiro RLM, Joyce CJ, Santiago PRP. Markerless kinetic and kinematic analysis in a multiplanar plyometric test for athletic performance and injury risk assessment. ***Journal of Sports Science***. Submitted October 2024.

5. **Cesar GM**, Mochida LY, Bedo BLS, Depto-Hoffman D, Tahara AK, Santiago PRP. A proposed protocol and multimodal toolbox for enhanced motion capture analysis of trunk-pelvis coordination during sit-to-stand in children with cerebral palsy. ***Journal of Visualized Experiments***. Submitted October 2024.

BOOK CHAPTERS

1. Burnfield JM, Norkin CC, **Cesar GM** (2019). Chapter 7: Examination of Gait. Editors: Susan B. O'Sullivan, Thomas J. Schmitz, George D. Fulk. In: Physical Rehabilitation. Publisher: F.A. Davis. 7th edition, pp 228-293. ISBN-13: 978-0-8036-6162-2.

2. Mochida LY, **Cesar GM** (2010). Chapter 2: Anatomical demands of aquatic activities. Editor: Paula H. Lobo da Costa. In: Swimming and Aquatic Activities: A guide to Teachers. Publisher: Manole. pp 14-33 (In Portuguese).

SELECTED ABSTRACTS

* Undergraduate students directly involved with mentorship
** Graduate students directly involved with mentorship

1. McDonald K**, Mochida LY, Santiago PRP, **Cesar GM**. The multiplanar plyometric test: A novel layer to screening anterior cruciate ligament injury risk. Accepted for presentation at the APTA Combined Section Meetings, Houston, TX. February 15, 2025.

2. Santiago PRP, Mochida LY, Junior SB, McDonald K**, Santos TF, Renato Tinós, **Cesar GM**. Predicting fatigue during treadmill running: A machine learning approach. *American Society of Biomechanics*, 2024. August 6, Madison, WI.

3. Flanagan K**, Diaz C*, **Cesar GM**, Aceros J. Integrating therapy into play: Stand-on ride-on for a child with cerebral palsy. 46th Annual International Conference of the EEE Engineering in Medicine and Biology Society. Rehabilitation Robotics. July 17, 2024, Orlando, FL.

4. Parrish R*, Mochida LY, **Cesar GM**. Measuring the relationship between lower extremity dexterity and athletic performance using a novel stepping task. *Undergraduate-Graduate Learning, Inquiry, and Distinctive Experimentation (U-GLIDE) Symposium*. December 8, 2023, University of North Florida, Jacksonville, FL.

5. **Cesar GM**, Mitchell S**, Mamea I**, Ghali M**, Hildreth A**, Cruz M**, Camacho AD** (2024). Kinetic outcomes post-balance interventions for children with cerebral palsy: Systematic review of randomized control trials. *Pediatric Physical Therapy*, 36(1): 126-175, 2024. DOI: 10.1097/PEP.0000000000001085.

6. Clark J*, Vredenburgh H*, Shim A, McDonald J*, Ruppert T, **Cesar GM** (2022). Does phalanx range of motion correlate to buttoning speed in older adults? *Journal of Science and Medicine in Sport*, 25:(suppl 2 S3). DOI: 10.1016/j.jsams.2022.09.115.

7. Shim A, Eldridge A**, **Cesar GM**, Ryan K, Fiaud V. Does proprioceptive training intervention improve balance scores in collegiate women's basketball players within six weeks? Presented at the 27th Annual Congress of the European College of Sport Sciences, September 2nd, 2022, Seville, Spain.

8. **Cesar GM**, Lee M**, DiFuria S**, Buster TW, Burnfield JM (2022). Accuracy of commercially-available step-count device for children with neurologic-induced gait limitations: Pilot study. *Pediatric Physical Therapy*, 34(1):102. DOI: 10.1097/PEP.0000000000000860.

9. Shah S**, Burnfield JM, Buster TW, **Cesar GM**, Gonabadi AM (2021). Comparison of lower extremity joint movement variability during motor-assisted elliptical exercise and treadmill walking. *Physical Medicine and Rehabilitation*, 13(S1)(suppl 1).

10. **Cesar GM**, Buster TW, Patten AM**, Perlaki BA**, Burnfield JM (2021). Reliability and accuracy of commercially-available wrist step-count device for children and adolescents with neurologic-induced gait impairment. *Archives of Physical Medicine and Rehabilitation*, 102(4):e14. DOI: 10.1016/j.apmr.2021.01.045.

11. Nimmo SM**, Catcher BJ**, White HJ**, Buster TW, **Cesar GM**, Burnfield JM (2021). Impact of backward motor-assisted elliptical training on upper extremity muscle activation patterns when using reciprocally moving handles. *Archives of Physical Medicine and Rehabilitation*, 102(4):e11-12. DOI: 10.1016/j.apmr.2021.01.037.

12. **Cesar GM**, Irons SL, Habron-Wach MG*, Buster TW, Burnfield JM (2021). Child with stroke improved walking, balance, and fitness following pediatric motor-assisted elliptical training intervention. *Nebraska Healthy Kids Summit* 2021. Virtually presented on March 3rd, 2021.

13. Jacobsen A**, Buster TB, **Cesar GM**, Burnfield JM (2020). Comparison of electromyographic demands on trunk musculature during forward and reverse motor-assisted elliptical training. *Archives of Physical Medicine and Rehabilitation*, 101(12):e134. DOI: 10.1016/j.apmr.2020.10.026.

14. Bedo BLS**, **Cesar GM**, Moraes R, Vieira LHP, Santiago PRP (2020). Impact of directional visual stimuli prior to sidestep cutting maneuver on the knee kinematics: An investigation with female handball athletes. *Brazilian Journal of Motor Behavior*, 2020; 14(4):43.

15. Baker BC**, Burnfield JM, Buster TW, **Cesar GM**, Mestelle Z**, Olbrantz CR** (2020). Comparison of lower extremity joint kinematics and electromyographic demands during backward walking and reverse motor-assisted elliptical training. *Physical Medicine and Rehabilitation,* 2020; 12(S1)(suppl 1).

16. Nalamasu R**, Schwery NA*, Rasmussen CM*, Buster TW, **Cesar GM**, Burnfield JM (2020). Motor-assistance and resistance during elliptical training alter upper extremity muscle activation patterns when using reciprocally moving handles. *Physical Medicine and Rehabilitation,* 2020; 12(S1)(suppl 1).

17. Nelson CA, Bruckner MA, Chae JS, Burnfield JM, Buster TW, **Cesar GM**, Pfeifer CM, Dasgupta P (2019). Design and kinematics of a modular robot for assistive tasks for the disabled. *Proceedings of the ASME 2019 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*. Anaheim, CA, August 18-21, 2019.

18. Nelson CA, Bruckner MA, Chae JS, Burnfield JM, Buster TW, **Cesar GM**, Pfeifer CM, Dasgupta P (2019). Modular self-reconfigurable robot for autonomous rehabilitation assistance in daily living tasks for spinal cord injury patients. *Proceedings for the 2019 Design of Medical Devices Conference*. Minneapolis, MN, April 15-18, 2019.

19. Burnfield JM, **Cesar GM**, Buster TW, Pfeifer CM, Anglehart CM*, Klem CJ*, Dasgupta P, Nelson CA (2018). Perceived value of modular self-reconfigurable robot for reaching/retrieving by individuals with SCI. *Archives of Physical Medicine and Rehabilitation*, 99(12):e209-210. DOI: 10.1016/j.apmr.2018.09.063.

20. Pfeifer CM, Whorley BA, Buster TW, **Cesar GM**, Burnfield JM (2018). Investigation of center of pressure during gait and motor-assisted elliptical training in adults. *Archives of Physical Medicine and Rehabilitation*, 99(12):e206. DOI: 10.1016/j.apmr.2018.09.052.

21. Berg-Poppe P, Tao H, Sternhagen J**, Johnson C**, **Cesar GM** (2018). Measuring limits of stability: Evidence of concurrent and construct validity between the Protokinetics Zeno Walkway and the Bertec Force Plate. *Journal of Neurologic Physical Therapy*, 42(1):45. DOI: 10.1097/NPT. 0000000000000206.

22. **Cesar GM**, Irons SL, Garbin A**, Eckels E*, Buster TW, Burnfield JM (2017). Child with traumatic brain injury improved gait abilities following intervention with pediatric motor-assisted elliptical training: A case report. *Journal of Neurologic Physical Therapy*, 41(1):84. DOI: 10.1097/NPT.0000000000000156.

23. Burnfield J, Irons SL, **Cesar GM**, Buster TW, Khot R**, Nelson CA (2016). *Pedi-ICARE* training improves walking and endurance of child with cerebral palsy. *Archives of Physical Medicine and Rehabilitation,* 97(12):e19-20.

24. Burnfield J, Buster TW, Irons SL, **Cesar GM**, Nelson CA, Rech NR*, Nichols EM* (2016). Pediatric walking vs. training on prototype motor-assisted elliptical: Kinematic comparison at self-selected comfortable speed. *Archives of Physical Medicine and Rehabilitation,* 97(10):e99.

25. Rasmussen CM*, Duncan ZE*, Edwards H*, Burnfield JM, **Cesar GM** (2016). Lower extremity postural and force imbalance between healthy and injured football athletes. *Proceedings for the American Society of Biomechanics Annual Conference.* Raleigh, NC, August 2-5, 2016.

26. Burnfield JM, Buster TW, Irons SL, Rech NR*, **Cesar GM**, Pfeifer CM, Nelson CA (2016). Pediatric Intelligently Controlled Assistive Rehabilitation Elliptical for walking and fitness: Prototype development and biomedical analysis. *RESNA/NCART (Rehabilitation Engineering Society of North America/National Coalition for Assistive and Rehab Technology) 2016 annual convention*. Arlington, VA, July 10-14, 2016.

27. Patterson J, **Cesar GM**, Hasenkamp R, Burnfield JM, Julie Honiker (2016). Vestibular and balance function in former collegiate athletes. *8th Annual Meeting of the American Balance Society*. Scottsdale, AZ, March 1-2, 2016.

28. Edwards H*, VanLent A*, Rasmussen CM*, Burnfield JM, **Cesar GM** (2016). Triple hop for distance as a measure of athletic performance. *Medicine and Science in Sports and Exercise*, 48(5 Suppl 1):1043. DOI: 10.1249/01.mss.0000488140.36006.c7.

29. Hasenkamp RM, **Cesar GM**, Ransone JW (2016). Squat Assessment following a Postural Correction Intervention. *Medicine and Science in Sports and Exercise*, 48(5 Suppl 1):112. DOI: 10.1249/01.mss.0000485336.45640.ac.

30. Tottori N, Kurihara T, Otsuka M, **Cesar GM**, Isaka T (2015). Preferred foot strategy for sprint initiation in children. *24th Annual Meeting of the European Society of Movement Analysis in Adults and Children*. Heidelberg, Germany, September 10-12, 2015.

31. Pfeifer CM, Burnfield JM, Twedt MH, Hawks JA, Hasenkamp RM, **Cesar GM** (2015). Post processing technique for approximating projectile trajectory in 3D space. *Proceedings for the American Society of Biomechanics Annual Conference.* Columbus, OH, August 5-8, 2015.

32. Lawrence EL, Dayanidhi S, **Cesar GM**, Sigward SM, Valero-Cuevas FJ (2015). Outcome measures for hand and leg function naturally reveal latent domains of strength, limb coordination, and sensorimotor processing. *Proceedings for the American Society of Biomechanics Annual Conference.* Columbus, OH, August 5-8, 2015.

33. Lawrence EL, **Cesar GM**, Bromfield M**, Peterson R**, Sigward SM, Valero-Cuevas FJ (2015). Sex differences in control strategies for both static and dynamic balance in young adults. *Proceedings of the Annual Meeting of the Society for the Neural Control of Movement*. Charleston, SC, April 19-20, 2015.

34. Bedo B**, Domingos MB*, Mariano F, Andrade V, Macari R, Vieira L, **Cesar GM**, Santiago PRP (2014). Knee kinematic analysis during unilateral landing of basketball and volleyball athletes. *XXIV Brazilian Congress on Biomedical Engineering*. Uberlandia, MG, Brazil, October 13-17, 2014 (In Portuguese).

35. **Cesar GM**, Joutras DM**, Parvez AH**, Sigward SM (2014). Children and adults employ different strategies to terminate running gait. *Medicine and Science in Sports and Exercise,* 46(5 Suppl 1):810-811. DOI: 10.1249/01.mss.0000495930.06921.1c.

36. **Cesar GM**, Lewthwaite R, Joutras DM**, Parvez AH**, Gow I**, Sigward SM (2014). Child-adult differences in the control of the body forward momentum with practice. *Journal of Sport & Exercise Psychology,* 36:S63. DOI: 10.1123/jsep.36.s1.s59.

37. **Cesar GM**, Havens KL, Bogdanoff SM*, Powers CM, Pollard C, Sigward SM (2013). Effect of cutting angle and sex on knee valgus moment. *Journal of Orthopaedic & Sports Physical Therapy*, 43(1):A128.

38. **Cesar GM**, Parvez AH**, Sigward SM (2013). Postural strategies for running gait termination: Comparison between children and adults. *International Society of Biomechanics Conference*. Natal, RN, Brazil, August 4-9, 2013.

39. Havens KL, **Cesar GM**, Sigward SM (2012). Center of mass position-velocity relationship for running termination control. *Gait and Clinical Movement Analysis Society (GCMAS) Meeting*. Grand Rapids, MI, May 9-12, 2012.

40. **Cesar GM**, Havens KL, Chang YJ, Sigward SM (2011). Effects of cut angle and online processing on cutting maneuvers. *Proceedings for the American Society of Biomechanics Annual Conference.* Long Beach, CA, August 10-13, 2011.

41. Charalambous C, Gerger M**, **Cesar GM**, Wade E, Winstein CJ (2011). Systematic investigation of anticipatory planning in goal-directed stepping. *Journal of Sport & Exercise Psychology,* 33:S61. PMID: 21877337.

42. Powers CM, Pollard CD, Lee SP, **Cesar GM**, Sigward SM (2010). The influences of sex and maturation on knee valgus moments during cutting: Implications for ACL injury. *Proceedings for the American Society of Biomechanics Annual Conference.* Providence, RI, August 18-21, 2010.

43. Noda CT, **Cesar GM**, Mochida LY, Lobo da Costa PH, Cunha SA, Santiago PRP (2009). Comparação da velocidade do pé e da bola no chute no futebol em diferentes níveis de desempenho do chute no futsal. *Motriz*, 15(2 Suppl 1):126.

44. Cunha S, Santiago PRP, **Cesar GM** (2008). Knee Joint movement during a sports-related task described by the quaternions method. *13th Annual Congress of the European College of Sports Science*. Estoril, Portugal, July 9-12, 2008.

45. Biasotto-Gonzalez DA, Oliveira CS, Gonzalez TO, **Cesar GM**, Bussadori SK, Berzin F (2008). Comparative electromyography analysis in TMD patients before and after physiotherapeutic treatment. *Gait & Posture,* 28(2):S95-S96.

46. Pereira VS*, Serrão FV, **Cesar GM**, Lobo da Costa PH, Santiago PRP (2008). Influence of hormonal variation during the menstrual cycle on knee kinematics during landing from a jump. *XVI Scientific Initiation Congress, Federal University of São Carlos*. Sao Carlos, Brazil, 2008 (In Portuguese).

47. Avila MA, **Cesar GM**, Serrão FV, Salvini TF (2007). Influence of core training in the neuromuscular response after ACL reconstruction: Case report. *XVII Brazilian Physical Therapy Congress*. Sao Paulo, Brazil, 2007 (In Portuguese).

48. **Cesar GM**, Biasotto-Gonzalez DA, Gonzalez TO (2007). Tibial rotation on the VMO myoelectric activity during open kinetic chain knee extension. *Brazilian Biomechanics Congress*. Sao Pedro, Brazil, 2007 (In Portuguese).

49. **Cesar GM**, Biasotto-Gonzalez DA, Buriti MA, Gonzalez TO (2006). Cross-section study of the prevalence of pain and temporomandibular discomfort and the quality of life of an elderly population. *VI National Scientific Initiation Congress*. Sao Paulo, Brazil, 2006 (In Portuguese).

50. **Cesar GM**, Gonzalez TO, Biasotto-Gonzalez DA (2005). Pain and injury prevalence in young basketball athletes and quality of life assessment. *XVI Brazilian Physical Therapy Congress*. Sao Paulo, Brazil, 2005 (In Portuguese).

51. Tosato JP, **Cesar GM**, Gonzalez TO, Correa JCF, Biasotto-Gonzalez DA (2005). Assessment of the masticatory muscles in individuals with tension-type headache: An electromyographic study. *XI Brazilian Biomechanics Congress*. Joao Pessoa, Brazil, 2005 (In Portuguese).

52. **Cesar GM**, Tosato JP, Biasotto-Gonzalez DA (2005). Relation between vertebral pain and pain in temporomandibular joint. *III International Dental Congress, State University of Campinas*. *Brazilian Journal of Oral Sciences*, 2005;4(14) (In Portuguese).

GRANT ACTIVITIES

APPICATIONS UNDER REVIEW

1. R25HD116676 Cesar (PI) 2025 – 2030
National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development
Elevating Workforce Proficiency in Pediatric Disabilities through Interdisciplinary Research Training Program
Award Amount: $726,714

ONGOING FUNDED PROJECTS

1. R03HD114548-01 Cesar (PI) 2024 – 2026
National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development
Biomechanical Changes Underpinning Stand-on Ride-on Power Mobility Devices for Children with Cerebral Palsy.
This R03 project provides an innovative approach to support children with cerebral palsy in a standing posture inside individually-adapted power mobility devices (toy cars) to improve participation, balance control, and lower extremity strength.
Award Amount: $141,804

2. *No award number* Cesar (PI) 2024 – 2025
University of North Florida RSCA
UNF RSCA Infrastructure Grant Proposal Hicks Hall Research Laboratory
This award was obtained to repair issues in the physical space of the laboratory as well as updating structures for data safety and cable management in alignment with federal grant agencies' standards.
Award Amount: $383,000

3. *No award number* Cesar (PI) June 2024 – June 2025
MedNexus Research Innovation Fund
Improving Care Delivery to Children with Cerebral Palsy Using Emerging Motion Capture System Technology
Co-Investigators and Department: Juan Aceros (Electrical Engineering), Ligia Mochida (Physical Therapy).
This award was obtained to purchase novel equipment for markerless motion capture system technology for biomechanical assessments dedicated for children with cerebral palsy.
Award Amount: $19,000

4. *Award number 1189205* Cesar (PI) 2024 – 2025
Foundation for Physical Therapy Research
Impact on Balance Control after Intervention with Novel Stand-on Ride-on Power Mobility Devices for Children with Cerebral Palsy.
This project explores a novel approach to support children with cerebral palsy in a standing posture inside individually-adapted power mobility devices to use at home with the goal of improving balance control and lower extremity strength.
Award Amount: $40,000

5. *No award number* Cesar/Santiago (Co-PIs) 2024 – 2024
PrInt USP/CAPES, Programa de Professor Visitante no Exterior Sênior
Development of a computational tool to classify single-limb motor development using soccer kicking in young children with cerebral palsy
The aim of this project is to develop an innovative computational tool leveraging machine learning and computer vision to analyze videos of children with cerebral palsy kicking a ball. This tool aims to classify and monitor their lower limb motor development and enhance balance.
April 2024 – September 2024
Award Amount: approximately U$17,000

COMPLETED FUNDED PROJECTS

1. *No award number* Cesar/Aceros (Co-PIs) 2023 – 2024
University of North Florida Foundation Board Initiative
Biomechanical and Psychosocial Impact of Ride-on Toy Cars for Children with Mobility Issues due to Cerebral Palsy
This project provided an innovative approach between Doctor of Physical Therapy and engineering students to enhance participation for children with cerebral palsy by adapting power mobility devices to improve physical and psychosocial components of health.
Award Amount: $20,585

2. *No award number* Cesar/Santiago (Co-PIs) 2023 – 2023
CAPES-PrInt, Programa de Apoio a Missões Acadêmico-Científicas no Exterior (PAME)
Collaboration Mission: Installation and Optimization of Biomechanics Laboratory Equipment at the University of North Florida: An exchange of experience between the laboratory of the past (LaBioCoM - USP - RP - Brazil) and the future (Physical Therapy Research Lab - UNF - FL - USA)
The completion of this project strengthened the scientific/academic relationship between the two Institutions while enhancing scholarly collaboration in the fields of health and technology.
Award Amount: R$25,639.63 (approximately U$5,100).

3. *No award number* Cesar (PI) 2022 – 2023
University of North Florida Shared RSCA Instrumentation Grant (SRIG)
Biomechanical Equipment for Collaborative Multidisciplinary Work towards the Evaluation of Human Movement
This grant was obtained to fully instrument the Department of Physical Therapy Research Lab with biomechanical equipment for research and pedagogical purposes, which generated collaborations with Physical Therapy, Clinical and Applied Movement Sciences, Mechanical and Electrical Engineering faculty, as well as international partnerships.
Award Amount: $182,705

4. *No award number* Cesar/Aceros (Co-PIs) Nov 2022 – Nov 2023
University of North Florida Academic Technology Grant
Biomedical Signal Analysis via Center of Pressure Readings: Application for Physical Therapy and Engineering Students
This grant was obtained to purchase a mobile force plate technology for Physical Therapy and Engineering interdisciplinary work advancing research activities and pedagogical purposes.
Award Amount: $2,900

5. Subaward number 10-8878 Burnfield/Dasgupta/Nelson (Co-PIs) 2017 – 2019
University of Nebraska Collaboration Initiative Seed Grant
Modular Self-Reconfigurable Robot for Autonomous Rehabilitation Assistance in Daily Living Tasks for Spinal Cord Injury Patients.
This project developed a prototype novel hardware for enhancing the flexibility and dexterity of modular self-reconfigurable robots (MSRs) for use alongside humans in assistive roles, supporting performance of daily routine reaching and grasping tasks.
Award Amount: $150,000.
Role: Research Scientist (data collection with human subjects; mentoring of students; dissemination of attained knowledge via publication of peer-reviewed manuscripts and abstracts).

6. *No award number* Burnfield/Cesar (Co-PIs) 2017 – 2018
Barbara Gard (Family Foundation)
Pediatric ICARE Fitness Project and Research
This research evaluated different types of exercise protocols to improve walking capacity, fitness, and independence in children and adolescents with physical disabilities.
Award Amount: U$10,000.

7. 1R21HD074820 Nelson/Burnfield (Co-PIs) 2013 – 2017
National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health and Human Development.
A Novel Pediatric Gait Rehabilitation Device.
This research study created technology to improve mobility, fitness, productivity and independence in children, especially those with impaired mobility.
Award Amount: U$398,344 ($138,041 total subcontract to Madonna).
***Role*:** Research Scientist (collaboration with protocol design; mentoring of students; data collection; dissemination of attained knowledge).

8. 90IF0060 (formerly NIDRR H133G130274) Burnfield (PI) 2013 – 2016
National Institute on Disability, Independent Living, and Rehabilitation Research, Administration for Community Living
Development of a Pediatric Intelligently Controlled Assistive Rehabilitation Elliptical (Pedi ICARE) Training System to Promote Walking and Fitness in Children with Physical Limitations.
This project developed the pediatric ICARE, an affordable tool that can be used in healthcare and community settings to help 3 to 12 year-old children with physical disabilities and special health care needs improve/retain walking function and cardiorespiratory fitness.
Award Amount: $606,000.
Role: Research Scientist (implementation of training and assessment protocol; data collection; mentoring of students; dissemination of attained knowledge via publication of peer-reviewed manuscripts and abstracts).

9. Graduate Student Research Grant Cesar (PI) 2012 – 2013
North American Society for the Psychology of Sports and Physical Activity, NASPSPA
Development of Postural Strategies in Children during Deceleration of Running.
This study determined the effects of practice on performance of a demanding whole-body dynamic task in children and young adults as measured by the ability to successfully accomplish running gait termination and by quantifying changes in speed-accuracy of task performance.
Award Amount: U$2,000.

10. James H. Zumberg Research and Innovation Fund Sigward (PI) 2012 – 2013
University of Southern California, Los Angeles, CA
The Development of Postural Strategies in Children.
This project (1) characterized strategies used by typically developing pre-pubertal males to control forward momentum and (2) provided knowledge of whole body mechanics underling successful running gait termination.
Award Amount: $27,000.
Role: Research Assistant (collaborated with project development; IRB document preparation and management; development of experimental protocol; participant recruitment; data collection; data processing and management; completion of reports; dissemination of attained knowledge via publication of peer-reviewed manuscripts and abstracts).

11. *No award number* Cesar (PI) 2007 – 2009
Foundation of Assistance in Research from the State of São Paulo (FAPESP)
Menstrual Cycle Influence on Knee Electromyographic Activity and Kinematics during the Single Leg Drop Landing.
This research advanced knowledge regarding the biomechanical control of the knee joint during different hormonal milieu across the menstrual cycle to advance anterior cruciate ligament injury prevention strategies for women.
Award Amount: R$36,270 (approximately US$18,135).

12. *No award number* Cesar (PI) 2005 – 2006
Undergraduate Project Scientific Research Grant, Institutional Program of Scientific Initiation Scholarships / National Council of Scientific and Technological Development (PIBIC/CNPq)
Cross-Sectional Study of the Prevalence of Pain and Temporomandibular Discomfort and the Quality of Life of an Elderly Population.
This research project characterized the impact of temporomandibular disorders in a large population of older adults.
Award Amount: R$4,800 (approximately U$2,400).

13. *No award number* Cesar (PI) 2004 – 2005
Undergraduate Project Scientific Research Grant, Institutional Program of Scientific Initiation Scholarships / National Council of Scientific and Technological Development (PIBIC/CNPq)
Pain and Injury Prevalence in Young Basketball Athletes and Quality of Life Assessment
This research project provided novel knowledge regarding pain and injury in a young population of basketball athletes prior to and during the competitive season.
Award Amount: R$4,800 (approximately U$2,400).

APPLICATIONS NOT FUNDED AS PI / CO-PI

1. *No award number* Cesar (PI) 2022 – 2025
Cerebral Palsy Alliance
Individualized Step-Counting Technology for Adolescents with Walking Impairment Due to Cerebral Palsy.
Award Amount: $185,017.

2. 1 R03 NS126778-01 Cesar (PI) 2022 – 2024
National Institute of Neurological Disorders and Stroke
Longitudinal characterization of balance control issues after pediatric brain injury.
Award Amount: $138,370.

3. *Award number not yet assigned* Burnfield/Cesar/Yu (Co-PIs) 2021 – 2024
National Institute on Disability, Independent Living, and Rehabilitation Research
ICARE vs. NuStep vs. CONTROL to Improve Walking and Fitness Post Stroke.
Award Amount: $600,000.

4. *No award number* Cesar (PI) 2021 – 2023
The B. Keith & Norma F. Heuermann Foundation
Increasing Accessibility and Use of Stepping Devices for Children with Disabilities.
Award Amount: $24,997.

5. *No award number* Cesar (PI) 2021 – 2022
APTA Pediatrics Research Grant
Responsiveness, Minimal Detectable Change, and Minimally Clinically Important Difference for Components of Balance Control during Pediatric Brain Injury Inpatient Rehabilitation.
Award Amount: $30,000 (Total Project Cost: $51,727).

6. 1R03NS123357-01 Cesar (PI) 2021 – 2023
National Institutes of Health, National Institute of Neurological Disorders and Stroke
Longitudinal Characterization of Balance Control Issues After Pediatric Brain Injury (scored).
Award Amount: $143,421.

7. E.W. "Al" Thrasher Award Cesar (PI) 2021 – 2024
Thrasher Research Fund
Longitudinal Characterization of Muscle Contributions to Balance Control Post-Pediatric Brain Injury.
Award Amount: $300,000.

8. R21HD105122 Burnfield/Cesar (Co-PIs) 2021 – 2023
National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health & Human Development
ICARE vs. NuStep High Intensity Interval Training Intervention to Improve Walking, Cardiorespiratory Fitness, and Arm Function during Inpatient Stroke Rehabilitation: A Randomized Controlled Trial.
Award Amount: $389,143.

9. R21HD101993 Burnfield/Cesar (Co-PIs) 2020 – 2022
National Institutes of Health, Eunice Kennedy Shriver National Institute of Child Health & Human Development
ICARE or Recumbent Cycle High Intensity Interval Training Intervention to Improve Walking and Cardiorespiratory Fitness in Adolescents with Physical Disabilities: A Randomized Controlled Trial (scored).
Award Amount: $414,345.

10. *No award number* Cesar (PI) 2020 – 2022
Foundation for Physical Therapy Research
Accuracy of Real-World Walking Activity Step-Counting for Children and Adolescents with Limited Mobility.
Award Amount: $40,000.

11. *No award number* Cesar (PI) 2019 – 2021
Foundation for Physical Therapy Research
Pilot Randomized Control Trial Using High Intensity Interval Training or Endurance Training to Improve Walking, Balance, and Aerobic Capacity in Children with Brain Injury.
Award Amount: $40,000.

12. *No award number* Cesar (PI) 2019 – 2022
Cerebral Palsy Alliance
Making Strides to Enhance Mobility and Fitness of Children with Neurologic-Induced Walking Impairment.
Award Amount: $180,000.

13. *No award number* Cesar (PI) 2019 – 2021
American Heart Association
Novel Exercise Approach to Build Health and Function in Overweight and Obese Adolescents with Walking Impairment.
Award Amount: $200,000.

14. 1R21HD098638-01 Burnfield/Cesar (PI) 2018 – 2020
National Institutes of Health
Randomized Control Trial Using High Intensity Interval Training for Cardiorespiratory Fitness, Walking, Balance, and Quality of Life in Adolescents with Disabilities (scored).
Award Amount: $373,175.

15. E.W. "Al" Thrasher Award Burnfield/Cesar (PI) 2017 – 2020
Thrasher Research Fund
Locomotor-Based Training for Cardiorespiratory Health and Mobility in Children with Cerebral Palsy.
Award Amount: $300,000.

PROFESSIONAL SERVICES

NATIONAL INSTITUTES OF HEALTH, SCIENTIFIC REVIEW GROUP

2021 – 2023
- Small Business Study Section: Neuro/Psychopathology, Lifespan Development, and STEM Education.
- Small Business Study Section: Neuropathology, Developmental Disability, and STEM Education.
- Small Business: Biobehavioral Processes. Special Emphasis Panel/Scientific Review Group 2023/01 ZRG1 BP-C (10) B.

POSTDOCTORAL RESEARCH PROJECT, EXTERNAL EVALUATOR

2017 – 2019 Effect of physical exercise intensity variation on cognitive function of elderly.
Candidate: Marcelo Porto, PhD.
Advisor: Paulo Roberto Pereira Santiago, PhD
Academic Institution: School of Physical Education and Sport of Ribeirão Preto. Graduate Program, University of São Paulo, Ribeirão Preto, Brazil.

DOCTORAL DISSERTATION, COMMITTEE MEMBER

2024 — Use of Inertial Technology to Evaluate the Performance and Movement Strategy of Soccer Players During a Change of Direction Task After Anterior Cruciate Ligament Reconstruction: Analysis of Mechanical Factors Associated with the Risk of Secondary Injury. *Participated in dissertation defense procedures only.*
PhD Candidate: João Belleboni Marques.
Advisor: Paulo Roberto Pereira Santiago, PhD.
Academic Institution: School of Physical Education and Sport of Ribeirão Preto. Graduate Program, University of São Paulo, Ribeirão Preto, Brazil.

MASTER'S THESIS, COMMITTEE MEMBER

2023 – 2024 — Integrating Therapy into Play: Stand-On Ride-On for a Child with Cerebral Palsy.
Candidate: Kira Flanagan.
Advisor: Juan Aceros, PhD.
Academic Institution: Department of Electrical Engineering, University of North Florida, Jacksonville, FL.

2024 – Present — Some Extensions to a Classic Inverted Pendulum model for the Human Postural Control system. *Participated in dissertation defense procedures only.*
Candidate: Francisco Javier Romero Aldave.
Advisor: Patrick Kreidl, PhD.
Academic Institution: Department of Electrical Engineering, University of North Florida, Jacksonville, FL.

MANUSCRIPT REVIEWER

2007 – Present — Selected Journals:

- Neurorehabilitation and Neural Repair, *Impact Factor 4.895*.
- Archives of Physical Medicine and Rehabilitation, *Impact Factor 4.060*.
- Journal of Orthopaedic & Sports Physical Therapy, *Impact Factor 6.276*.
- Gait and Posture, *Impact Factor 2.746*.
- Disability and Rehabilitation, *Impact Factor 2.439*.

CONFERENCE ABSTRACT REVIEWER

2007 – Present — Selected Conferences:

- American Physical Therapy Association Pediatrics Annual Conference.
- American Physical Therapy Association Combined Sections Meeting, Academy of Pediatric Physical Therapy.
- American Society of Biomechanics.
- Brazilian Congress of Physical Therapy.
- Brazilian Congress of Biomechanics.

TEACHING

DOCTOR OF PHYSICAL THERAPY COURSES

2023 – Present	Research Application for Evidence Based Practice (PHT 7608C, 2 credits), 30 students, Instructor of Record. Department of Physical Therapy, University of North Florida, Jacksonville, FL.
2023 – Present	Foundations of Evidence Based Practice (PHT 6606C, 3 credits), 30 students, Instructor of Record. Department of Physical Therapy, University of North Florida, Jacksonville, FL.
2023 – Present	Kinesiology (PHT 6126C, 3 lecture credits, 1 non-lecture credit), 30 students, Co-Instructor. Department of Physical Therapy, University of North Florida, Jacksonville, FL.
2022 – Present	Gross Anatomy (PHT 6110C, 5 lecture credits, 6 non-lecture credits), 30 students, Co-Instructor. Department of Physical Therapy, University of North Florida, Jacksonville, FL.
2016 – 2022	Human Gait Analysis (PHTH 710, 6 credits), 32 students, Lecturer. Department of Physical Therapy, University of South Dakota, Vermillion, SD.
2009 – 2011	Musculoskeletal Anatomy (PT514L, 4 credits), 90+ students, Teaching Assistant. Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, CA.
2009 – 2012	Analytical Anatomy (PT554L, 3 credits), 90+ students, Teaching Assistant. Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, CA.
2014 – 2014	Clinical Electrophysiology (PT583L, 1 credit), 96 students, Teaching Assistant. Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, CA.
2012 – 2013	Neuroanatomy (PT534L, 3 credits), 96 students, Teaching Assistant. Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, CA.

GRADUATE LEVEL COURSES

2011 – 2011	Human Functional Anatomy (OT260, 3 credits), Occupational Therapy, 100 students, Teaching Assistant. University of Southern California, Los Angeles, CA, USA.
2010 – 2010	Head and Neck Anatomy (ANAT321, 2 credits), School of Dentistry, 141 students, Teaching Assistant. University of Southern California, Los Angeles, CA, USA.

CONTINUING EDUCATION COURSES

2012	Update on Lumbar Spine (Co-Instructor), Division of Biokinesiology and Physical Therapy, University of Southern California, Los Angeles, CA.
2008	Temporomandibular Joint Rehabilitation (Instructor), Department of Physical Therapy, University Center Sant'Anna, Sao Paulo, SP, Brazil.
2008	Massage Therapy (Co-Instructor), Department of Physical Education, Universidade Estadual Paulista Júlio de Mesquita Filho UNESP, Rio Claro, SP, Brazil.
2007	Athletic and Functional Taping (Instructor), Department of Physical Therapy, University of Mogi das Cruzes, Mogi das Cruzes, SP, Brazil.
2004 – 2009	Physical Therapy Approach to Temporomandibular Disorders – From Diagnosis to Treatment (Co-Instructor), Brazil.

UNDERGRADUATE LEVEL COURSES

2009 – 2009	Biological Dysfunctions, Physical Activity and Health (Instructor of Record), 40 students. Department of Physical Education, University Centro Universitario Claretiano, Batatais, SP, Brazil.
2004 – 2006	Kinesiology I, Physical Therapy Bachelor's Degree, 40+ students, Teaching Assistant. Department of Physical Therapy, University of Mogi das Cruzes. Mogi das Cruzes, SP, Brazil.
2004 – 2006	Kinesiology II, Physical Therapy Bachelor's Degree, 40+ students, Teaching Assistant. Department of Physical Therapy, University of Mogi das Cruzes. Mogi das Cruzes, SP, Brazil.
1998 – 1999	Introduction to Human Anatomy (BIO140, 5 credits), 35 students, Teaching Assistant. Grossmont College, San Diego, CA. USA.

RESEARCH MENTORING

FUNDED UNDERGRADUATE PROJECTS

2015 – 2016	Undergraduate Creative Activities and Research Experience (UCARE). Student: Corbin Rasmussen (Nutrition, Exercise, and Health Science, University of Nebraska–Lincoln, Lincoln, NE). *Identification of Kinematic and Kinetic Injury Risk Predictors in Division I Football Athletes.* Award Amount: U$2,400.

2008 – 2009 Undergraduate Physical Therapy Scientific Initiation Grant (PIBIC).
Student: Igor Phillip dos Santos Glória (Physical Therapy, University of Mogi das Cruzes, Mogi das Cruzes, Brazil).
Analysis of Intra and Inter-Examiner Reliability during Postero-Anterior Mobilization of the Maitland Method.
Award Amount: R$4,800 (approx. U$2,400).

2007 – 2008 Undergraduate Physical Therapy Scientific Initiation Grant (PIBIC).
Student: Vanessa Santos Pereira (Physical Therapy, Federal University of São Carlos, São Carlos, Brazil).
Influence of Hormonal Variation during the Menstrual Cycle on Electrical Activity of the Muscles Gluteus Medius, Rectus Femoris and Biceps Femoris.
Award Amount: R$4,800 (approx. U$2,400).

2007 – 2008 São Paulo Research Foundation (Fundação de Amparo à Pesquisa do Estado de São Paulo, FAPESP).
Student: Vanessa Santos Pereira (Physical Therapy, Federal University of São Carlos, São Carlos, Brazil).
Influence of Hormonal Variation during the Menstrual Cycle on Knee Kinematics during Landing from a Jump.
Award Amount: R$6,310 (approx. U$3,155).

UNDERGRADUATE CONCLUSION THESIS (CAPSTONE), COMMITTEE MEMBER

2008 *Injury Incidence in a Women's Professional Volleyball Team*.
Student: Daniela Silva Pedrazzani, Department of Physical Therapy, Federal University of São Carlos, São Carlos, Brazil.

2008 *Analysis of Kinematic Differences When Pedaling Under Normal and Exhaustion States*.
Student: Fernando Sarpa Brigante, Department of Physical Education and Human Motricity, Federal University of São Carlos, São Carlos, Brazil.

2007 *Reproducibility of Gait Measurements from a 4060-08 Bertec Force Plate*.
Student: Fabrício Luis Wodewotzky, Department of Physical Therapy, Federal University of São Carlos, São Carlos, Brazil.

2007 *Effect of Eccentric Isokinetic Training on Post-Reconstructive ACL Surgery Individuals: Analysis of Conventional and Functional Hamstrings:Quadriceps Ratio*.
Student: Aline Pereira da Silva, Department of Physical Therapy, Federal University of São Carlos, São Carlos, Brazil.

RESEARCH MENTORSHIP

2022 – 2023 American Physical Therapy Association, Academy of Pediatric Physical Therapy. Pediatric Physical Therapy Journal Mentored Writing Scholarship.
Mentee: Debra Depto-Hoffman, PT, DPT, PCS.

2016 – 2022 Madonna Rehabilitation Hospitals. Mentorship of 60+ undergraduate and graduate students from diverse disciplines:

- Postdoctoral Fellowship, Physical Therapy;
- Doctor of Physical Therapy Students;
- Physical Medicine & Rehabilitation Residents;
- Undergraduate Students: Kinesiology, Engineering (Biological Systems, Biomedical, Computer, Mechanical, Electrical), Pre-Physical Therapy, Occupational Therapy, Kinesiology and Human Performance, Exercise Science, Neuroscience and Pre Medicine, Psychology.

2015 University of Nebraska-Lincoln. Mentorship of 14 undergraduate students:

- Athletic Training;
- Nutrition, Exercise, and Health Science;
- Biological Systems Engineering;
- Mechanical Engineering;
- Computer Engineering;
- Psychology;
- Statistics.

PROFESSIONAL PRESENTATIONS

2023 Biomechanical instrumentation for human movement analysis. "Child-centered, team-based, interdisciplinary Bioengineering Summer Research Experience". National Institutes of Health R25-NICHD.

2023 Biomechanics of balance control and lower extremity during athletic tasks. Guest speaker, Department of Mechanical Engineering, University of North Florida, FL.

2021 High intensity interval training for the neurologic patient population. Nebraska/Kansas State Clinic, National Strength and Conditioning Association. College of Saint Mary, Omaha, NE.

2019 Exercise science principles informing cardiorespiratory training. Madonna Locomotor Training Conference: Integrating Scientific Principles with Clinical Practice to Improve Function, Fitness, Health and Wellbeing for Individuals with Mobility Impairments. Madonna Rehabilitation Hospitals. Lincoln, NE.

2015 Mechanics of the lower body during landing and cutting in sports. Guest speaker for the Pierson Graduate Seminars, Department of Mechanical and Materials Engineering, University of Nebraska–Lincoln, NE.

2014 Control of body forward momentum: Application to physical activity and sports participation in children and adults. Guest speaker for the Brown Bag Lecture Series, Department of Physical Therapy, University of Nevada, Las Vegas, NV.

2007 Scientific research designs. Human Movement Biomechanics Graduate Group, Federal University of São Carlos, São Carlos, SP, Brazil.

2007 Anatomical demands of aquatic activities. Guest speaker for the Physical Education course Fundamentals of Aquatic Activities. Department of Physical Education and Human Kinetics, Federal University of São Carlos, São Carlos, SP, Brazil.

PROFESSIONAL MEMBERSHIPS

2024 – Present International Society of Biomechanics.

2023 – Present American Society of Biomechanics.

2023 – Present American College of Sports Medicine.

2021 – Present American Physical Therapy Association.

- Research Section
  - Biomechanics Special Interest Group.
  - Evidence-Based Practice Special Interest Group.
- Pediatric Section
  - Pediatric Sports-Fitness Special Interest Group.
- Nebraska Chapter of the American Physical Therapy Association

2021 – Present Child Health Research Institute, Affiliate Member. University of Nebraska Medical Center and Children's Hospital and Medical Center.

2018 – 2019 American Heart Association/American Stroke Association, ID 000236477232.

- Council on Epidemiology and Prevention.

2017 – Present Physical Therapy License, Nebraska, ID 3785.

2008 – Present Rescue Scuba Diver, PADI ID 09090F8647.

2007 – 2016 Physical Therapy and Occupational Therapy Regional Council, ID 106809-F, CREFITO-3, São Paulo, Brazil.

LANGUAGES

- Fluent written and conversational English and Brazilian Portuguese.