

Oscar Vila Dieguez, MSc, PT

October 2023

Division of Biokinesiology and Physical Therapy

University of Southern California; 1540 E. Alcazar Street, CHP 155 | Los Angeles, CA 90089

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EDUCATION

- 2020-Present **PhD candidate in Biokinesiology & Physical Therapy.**
University of Southern California, United States
Advisor: Lori Michener
Thesis title: Mechanisms of Recovery in Rotator Cuff Tendinopathy.
- 2018 **MSc in Kinesiology & Health Studies.**
University of Regina, Canada
Advisor: John Barden
Thesis title: Body roll differences in freestyle swimming between swimmers with and without shoulder pain. ([LINK](#))
- 2014 **BSc in Physical Therapy.**
Gimbernat-Cantabria Physical Therapy University School, Spain.
Degree final project: Effects of the inclusion of isoinertial machine in the treatment of the swimmer's shoulder with elastic bands. Double-blinded randomized controlled trial. ([LINK](#))

WORK EXPERIENCE

- 2017-2020 **Adjunct Clinical Faculty.** Gimbernat-Cantabria PT University.
Guidance of students developing basic observational studies or clinical trials and grading of undergraduate final projects in shoulder and wearable sensors related topics.
- 2016-2018 **Research Assistant.** Own the Podium (OTP) project, led by Dr. John Barden.
Funding source: Government of Canada with additional funding provided by the Canadian Olympic Committee (COC), the Canadian Olympic Foundation and the Canadian Paralympic Committee (CPC). The project involved developing a sensor-based swimming performance analysis system for the Canadian National Swimming Team.
Duty: Data collection with swimmers, preliminary analysis of the data and validation with the gold standard.
- 2017-2020 **Physical Therapist.** Torrelavega Swim Team.
- 2016-2020 **Physical Therapist.** Pretium Sports Center. Outpatient private practice.
- 2016-2018 **Physical Therapist.** Ekana Sports Center. Outpatient private practice.
- 2016-2017 **Physical Therapist.** Kalma Medical Center. Outpatient private practice.
- 2015-2016 **Physical Therapist.** Regina Optimist Dolphins Swim Team

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

European Society for Shoulder and Elbow Rehabilitation (EUSSEER)

American Physical Therapy Association (APTA)

American College of Sports Medicine (ACSM)

LICENSURE

CAPTE approved Physical Therapy education for NY state (licensure eligible)

GRANTS

Biomarkers of Tendon Recovery for Rotator Cuff Tendinopathy

Define tendon morphological changes with 4-week resistance exercise, how the associated muscle modulates tendon remodeling, and the relationship to patient-rated outcomes in patients with rotator cuff tendinopathy. Role: Research Assistant (PI: Lori Michener)

Foundation for Physical Therapy Research. \$100,000.

01/01/2023 – 12/31/2024

Mechanisms of Exercise and Central Sensitization for Patients for Rotator Cuff Tendinopathy. Identify central mechanisms using brain imaging related to beneficial functional outcomes of exercise in patients with rotator cuff tendinopathy. The findings will optimize delivery and treatment response to exercise. Role: Research Assistant (PI: Lori Michener/Jason Kutch)

The Charles D. and Mary A. Bauer Foundation. \$45,000.

09/1/2021 – 08/31/2023

Swimlytics, a sensor-based swimming performance analysis system. Develop an app for swim coaches in the Canadian Olympic Team to retrieve data from a smartwatch and process swimming timing and stroke analytics. Role: Research Assistant (PI: John Barden)

Innovation for Gold grant from the Own the Podium initiative. \$110,700.

04/1/2015 – 04/1/2017

SCHOLARSHIPS AND AWARDS

2023	ACSM Biomechanics Interest Group Student Research Award (500 USD)
2023	APTA CSM Biomechanics Special Interest Group Student Travel Award (500 USD)
2022	ACSM Biomechanics Interest Group Student Research Award (500 USD)
2022	ACSM Biomechanics Interest Group Student Travel Award (400 USD)
2018	Paragon Award of Innovation (Innovation Place Saskatchewan)
2016	Provincial Sport Governing Body Student-Athlete Award, Saskatchewan (1,000 C\$)
2016	Academic All-Canadian Scholarship, University Sport in Canada (500 C\$)
2016	Research Assistant Master Student Award, University of Regina (6,000 C\$)
2016	International Student Athletic Award, University of Regina (1,000 C\$)
2015	International Student Athletic Award, University of Regina (1,000 C\$)
2015	Faculty of Graduate Studies and Research Graduate Scholarship, University of Regina (6,000 C\$)
2015	International Student Athletic Award, University of Regina (1,000 C\$)
2015	Faculty of Graduate Studies and Research Graduate Scholarship, University of Regina (6,000 C\$)
2015	Academic All-Canadian Scholarship, University Sport in Canada (1,000 C\$)
2015	Provincial Sport Governing Body Student-Athlete Award, Saskatchewan (1,000 C\$)
2014	Saskatchewan Innovation and Opportunity Graduate Scholarship (1,000 C\$)
2014	International Student Athletic Award, University of Regina (1,000 C\$)

PEER-REVIEWED PUBLICATIONS

In preparation

1. **Vila-Diequez O**, Manzanedo S, McPherson D, Roy JS & Michener LA. (2023) EMG changes after intervention for rotator cuff tendinopathy. A systematic review.
2. **Vila-Diequez O**, Awokuse D, Klich S, Heindel M & Michener LA. (2023) Supraspinatus tendon morphological and mechanical properties in normal-load, high-load and pathological conditions
3. Zipser C, **Vila-Diequez O**, Bashford G, Kulig K, Michener LA. (2023) Micromorphology of the supraspinatus tendon: Optimal ultrasound parameters for spatial frequency analysis.
4. Klich S, Madeleine P, Rudnik D, Domagalska N, Pietraszewski B, **Vila-Diequez O** & Michener LA. (2023) Acute effects of exercise in tendon properties, pain, fatigue, range of motion and strength in swimmers with rotator cuff tendinopathy

Published

5. **Vila-Diequez O**, Heindel M, Awokuse D, Kulig K & Michener LA. (2023) Exercise for Rotator Cuff Tendinopathy: Proposed Mechanisms of Recovery. *Shoulder Elb.* 2023;15(3):233-249. doi:10.1177/17585732231172166
6. **Vila-Diequez O** & Barden JM. (2020) Body roll differences in freestyle swimming between swimmers with and without shoulder pain, *Sports Biomechanics*, 1-14. DOI: [10.1080/14763141.2020.1760923](https://doi.org/10.1080/14763141.2020.1760923)

ABSTRACTS

1. **Vila-Diequez O**, Heindel MD, Barros B, Michener LA. Exercise for Rotator Cuff Tendinopathy: Baseline characteristics and early change of responders versus non-responders. *APTA Combined Sections Meeting, Boston, MA, 2024*
2. McPherson DC, **Vila-Diequez O**, Michener LA. Measuring force in patients with RC tendinopathy: is peak force enough? *APTA Combined Sections Meeting, Boston, MA, 2024*
3. Mears C, Heindel MD, **Vila-Diequez O**, Michener La. Are deficits in muscle performance related to psychological factors in those with rotator cuff tendinopathy? *APTA Combined Sections Meeting, Boston, MA, 2024*
4. Abeles B, Heindel MD, **Vila-Diequez O**, Barros B, Sexton T, Michener La. Pain Catastrophizing Impacts Exercise Response: Assess Early and Often in Those with Rotator Cuff Tendinopathy. *APTA Combined Sections Meeting, Boston, MA, 2024*
5. Heindel MD, Kutch JJ, Silva B, **Vila-Diequez O**, Michener La. Are deficits in muscle performance related to psychological factors in those with rotator cuff tendinopathy? *APTA Combined Sections Meeting, Boston, MA, 2024*
6. **Vila-Diequez O**, Michener LA. Stronger Or Faster Muscles: Which Matters More For Recovery In Patients With Rotator Cuff Tendinopathy?. *ACSM Annual meeting and World Congress, Denver, CO, 2023.*
7. Zipser C, **Vila-Diequez O**, Michener LA. Supraspinatus tendon micromorphology in rotator cuff tendinopathy and changes after an exercise intervention. *Med Sci Sports Exerc. ACSM Annual meeting and World Congress, Denver, CO, 2023.*
8. **Vila-Diequez O**, Michener LA. Exercise for Rotator Cuff Tendinopathy: What Differentiates Responders from Non-Responders? *J Orthop Sports Phys Ther.* 2023;53(2):CSM1-CSM27. doi:10.2519/jospt.2023.53.2.CSM1
9. Schlenk N, **Vila-Diequez O**, Michener LA. Supraspinatus Tendon Thickness Changes with Resisted Exercise Intervention for Rotator Cuff Tendinopathy. *J Orthop Sports Phys Ther.*

- 2023;53(2):CSM1-CSM27. doi:10.2519/jospt.2023.53.2.CSM1
10. Abeles R, **Vila-Diequez O**, Heindel M, Dunn M, Sexton T, Michener LA. Contribution of Psychosocial Factors to Exercise Response in Participants with Rotator Cuff Tendinopathy: Pilot Study. *J Orthop Sports Phys Ther.* 2023;53(2):CSM1-CSM27. doi:10.2519/jospt.2023.53.2.CSM1
 11. **Vila-Diequez O**, Michener LA. The puzzle of Rotator Cuff Tendinopathy and Exercise: analysis of two pieces that fit together. *International Shoulder Group Conference, Delft, The Netherlands, 2022.*
 12. **Vila-Diequez O**, Michener LA. Increased rate of force development is correlated to symptom improvement in patients with rotator cuff tendinopathy. *Med Sci Sports Exerc. ACSM Annual meeting and World Congress, San Diego, CA, 2022.*
 13. **Vila-Diequez O**, Seitz AL, Michener LA. Size matters: supraspinatus tendon thickness in responders vs. non responders after a 6-week rehabilitation intervention. *Combined Sections Meeting of the APTA, San Antonio, TX. 2022.*
 14. Malanda Calleja A, **Vila-Diequez O**. (2018). Reliability of a smartphone app for detecting differences in static stability of the lower limb between football players with history of anterior cruciate ligament tear and healthy players. *Presented at the Education for Innovation and Multidisciplinarity Conference, Paris, France.* September. ([LINK](#))
 15. Barden JM, Gerhard DB, **Vila-Diequez O**, Ubbens JR & Park B. (2017). The effect of breathing asymmetry on stroke periodicity in competitive front-crawl swimming. *Presented at the Sport Innovation (SPIN) Summit, Richmond, British Columbia.* October. ([LINK](#))
 16. **Vila-Diequez O**, Nava A. (2014) Effects of the inclusion of isoinertial machine in the treatment of the swimmer's shoulder with elastic bands. Randomized double blind controlled trial. *Depósito Digital EUG, Undergraduate final-year Research Project.* ([LINK](#))

TEACHING

Doctor of Physical Therapy program, University of Southern California, United States.

Spring 2021, 2022 & 2023	PT-561B Evidence for Physical Therapist Practice TA.
Fall 2021 & 2022	PT-561C Evidence for Physical Therapist Practice TA.
Summer 2021	PT-514L Musculoskeletal Anatomy

Gimbernat-Cantabria Physical Therapy University School, Spain.

2016-2020	G1506 Clinical rotation year 4
2016-2020	G1540 Final year research project

ECUFIS Continuing education courses.

2016-2020	Translator of continuing education courses in shoulder related topics. Translated speakers: Chris Littlewood, Marcus Bateman, Ian Horsley
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Department of Kinesiology, University of Regina, Canada.

Winter 2016	KIN 260 – Human Anatomy Lab Instructor
Fall 2016	KIN 260 – Human Anatomy Lab Instructor
Fall 2016	KIN 285 – Biomechanics Lab Instructor
Winter 2015, 2016 & 2017	KIN 385 - Clinical Biomechanics Teaching Assistant
Spring 2015, 2016 & 2017	KIN 285 – Biomechanics Teaching Assistant
Winter, Spring & Fall 2015 -2018	KIN 280 - Motor control
Winter 2015	KIN 180 - Lifespan growth and motor development

CONTINUING EDUCATION COURSES

Management of the shoulder

Marcus Bateman.

The shoulder: Steps to success

Jo Gibson.

Assessment and management of rotator cuff disorders. An evidence-based approach

Chris Littlewood

Advanced course in the rehabilitation of the shoulder

Ann Cools.

The shoulder: Theory and practice

Jeremy Lewis.

International Physical Therapy Conference: Management of the Shoulder Girdle

Ian Horsley, Chris Littlewood, Marcus Bateman, Lluís Puig.

Update in the assessment and treatment of shoulder, elbow and hand pathologies

Gimbernat-Cantabria PT University School

Enric Sirvent, Vicenç Punçola, Jordi Huguet M.D., Josep Maria Potau M.D., Fernando del Canto M.D.

Course in Teaching Development

Centre for teaching and learning, University of Regina.

SERVICE

Journal Reviewer:

- Shoulder & Elbow Surgery
- Musculoskeletal Science & Practice
- Journal of Sports Sciences

International Students and Allies Affinity Group Leader at USC

Volunteer PT for USC Swim Club

BKN Student-Invited Speaker organizer at USC

Clinical Examiner for PT 554 - Analytical Anatomy at USC