

Cristian Mesquida

POSTDOCTORAL RESEARCHER

Eindhoven University of Technology, The Netherlands

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Employment

Eindhoven University of Technology

Eindhoven, The Netherlands

POSTDOCTORAL RESEARCHER

2025-Present

- Contributing to the development of Papercheck, an R package that helps researchers identify and prevent poor research practices before publication and facilitates data extraction from published articles

Eindhoven University of Technology

Eindhoven, The Netherlands

PHD CANDIDATE

2021-2025

- My PhD thesis examined the factors hindering replicability and reproducibility in sports and exercise science

Education

Eindhoven University of Technology

Eindhoven, The Netherlands

PHD

2021-2025

- My PhD thesis focused on the factors that hinder replicability and reproducibility of research in sports and exercise science

University of Barcelona

Barcelona, Spain

MSC. INTEGRATIVE PHYSIOLOGY

2017-2019

- My master thesis focused on the effect of two training protocols on maximal oxygen uptake in highly-trained cyclists

University of Granada

Granada, Spain

MSC. RESEARCH IN SPORT AND PHYSICAL ACTIVITY

2015-2017

- My master thesis focused on the performance determinants of swimming sprint performance

University of Vic

Vic, Spain

BSC. SPORTS AND EXERCISE SCIENCE

2009-2013

- My bachelor end project focused on developing a training programme to reduce the injury risk of hamstrings in football players

Publications

- Lakens, D., Cristian, Xavier-Quintais, G., Rasti, S., Toffalini, E., & Altoè, G. (2025). *Rethinking Type S and M Errors*. OSF. https://doi.org/10.31234/osf.io/2phzb_v1
- Mesquida, C., Murphy, J., Warne, J., & Lakens, D. (2025). *The prevalence, reporting practices, and methodological quality of a priori power analyses in sports and exercise science research*. SportRxiv. <https://doi.org/10.51224/SRXIV.575>
- Mesquida, C., Warne, J., & Lakens, D. (2025). *A scoping review of the transparency, reporting practices and methodological rigor of meta-analyses published in Sports Medicine*. SportRxiv. <https://doi.org/10.51224/SRXIV.576>
- Mesquida, C., Warne, J., & Lakens, D. (2025). *What is your hypothesis? On the importance of knowing your hypothesis before conducting a hypothesis test*. SportRxiv. <https://doi.org/10.51224/SRXIV.577>
- Ditroilo, M., Mesquida, C., Abt, G., & Lakens, D. (2025). *Exploratory research in sport and exercise science: Perceptions, challenges, and recommendations*. *Journal of Sports Sciences*, 1–13. <https://doi.org/10.1080/02640414.2025.2486871>
- Mesquida, C., Murphy, J., Warne, J., & Lakens, D. (2025). *On the replicability of sports and exercise science research: Assessing the prevalence of publication bias and studies with underpowered designs by a z-curve analysis*. SportRxiv. <https://doi.org/10.51224/SRXIV.534>
- Murphy, J., Caldwell, A. R., Mesquida, C., Ladell, A. J. M., Encarnación-Martínez, A., Tual, A., Denys, A., Cameron, B., Van Hooren, B., Parr, B., DeLucia, B., Mason, B. R. J., Clark, B., Egan, B., Brown, C., Ade, C., Sforza, C., Taber, C. B., Kirk, C., ... Warne, J. P. (2025). *Estimating the Replicability of Sports and Exercise Science Research*. *Sports Medicine*. <https://doi.org/10.1007/s40279-025-02201-w>

8. Lakens, D., Mesquida, C., Rasti, S., & Ditroilo, M. (2024). The benefits of preregistration and Registered Reports. *Evidence-Based Toxicology*, 2(1), 2376046. <https://doi.org/10.1080/2833373X.2024.2376046>
9. Mesquida, C., & Lakens, D. (2024). Is the effect large enough to matter? Why exercise physiologists should interpret effect sizes meaningfully: A reply to Williams et al. (2023). *The Journal of Physiology*, 602(1), 241–242. <https://doi.org/10.1113/JP285901>
10. Holgado, D., Mesquida, C., & Román-Caballero, R. (2023). Assessing the Evidential Value of Mental Fatigue and Exercise Research. *Sports Medicine*, 53(12), 2293–2307. <https://doi.org/10.1007/s40279-023-01926-w>
11. Mesquida, C., Murphy, J., Lakens, D., & Warne, J. (2023). Publication bias, statistical power and reporting practices in the Journal of Sports Sciences: Potential barriers to replicability. *Journal of Sports Sciences*, 41(16), 1507–1517. <https://doi.org/10.1080/02640414.2023.2269357>
12. Murphy, J., Mesquida, C., & Warne, J. (2023). A Survey on the Attitudes Towards and Perception of Reproducibility and Replicability in Sports and Exercise Science. *Communications in Kinesiology*, 1(5). <https://doi.org/10.51224/cik.2023.53>
13. Bossi, A. H., Mesquida, C., Hopker, J., & Rønnestad, B. R. (2023). Adding Intermittent Vibration to Varied-intensity Work Intervals: No Extra Benefit. *International Journal of Sports Medicine*, 44(2), 126–132. <https://doi.org/10.1055/a-1812-7600>
14. Mesquida, C., Murphy, J., Lakens, D., & Warne, J. (2022). Replication concerns in sports and exercise science: A narrative review of selected methodological issues in the field. *Royal Society Open Science*, 9(12), 220946. <https://doi.org/10.1098/rsos.220946>
15. Murphy, J., Mesquida, C., Caldwell, A. R., Earp, B. D., & Warne, J. P. (2022). Proposal of a Selection Protocol for Replication of Studies in Sports and Exercise Science. *Sports Medicine*. <https://doi.org/10.1007/s40279-022-01749-1>
16. Etxebarria, N., Wright, J., Jeacocke, H., Mesquida, C., & Pyne, D. B. (2021). Running Your Best Triathlon Race. *International Journal of Sports Physiology and Performance*, 16(5), 744–747. <https://doi.org/10.1123/ijsp.2020-0838>
17. Bossi, A. H., Mesquida, C., Passfield, L., Rønnestad, B. R., & Hopker, J. G. (2020). Optimizing Interval Training Through Power-Output Variation Within the Work Intervals. *International Journal of Sports Physiology and Performance*, 15(7), 982–989. <https://doi.org/10.1123/ijsp.2019-0260>

Teaching Experience

Eindhoven University of Technology

LECTURER OF BEHAVEORAL RESEARCH METHODS 2

2025-Present

- Teaching multiple regression, power analysis, and equivalence testing. Teaching materials can be found at https://cristianmesquida.github.io/multiple_regression/

Eindhoven University of Technology

LECTURER OF METASCIENCE

2024-Presentation

- Teaching Introduction to Meta-analysis as part of the Metascience course. Teaching materials can be found at https://github.com/cristianmesquida/introduction_to_meta-analysis

Eindhoven University of Technology

TEACHING ASSISTANT OF OF BEHAVEORAL RESEARCH METHODS 3

2024

- Assisting students during tutorial sessions with conducting their assignments

Eindhoven University of Technology

TEACHING ASSISTANT OF ADVANCED DATA ANALYSIS

2024

- Taught R Markdown for reproducible reporting and data simulation for statistical analysis

Technological University of Dublin

TEACHING ASSISTANT OF APPLIED EXERCISE PHYSIOLOGY

2021

- Taught anatomy

Supervision

Eindhoven University of Technology

SUPERVISOR OF MASTER END PROJECT

2025

- Co-supervised a student who used automated search extraction (Metacheck) to extract hypotheses from academic articles and attempted to classify them using large language models

Eindhoven University of Technology

SUPERVISOR OF BACHELOR END PROJECT

2025

- Co-supervised a student who conducted a meta-analysis examining the impact of school sanitation on students' academic performance

Eindhoven University of Technology

SUPERVISOR OF A MASTER'S THESIS

2024

- Co-supervised the creation of a tool to detect the incorrect use of standard error of measurement instead of the standard deviation when computing effect sizes in meta-analyses

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SUPERVISOR OF BACHELOR END PROJECT

2023

- Co-supervised four students creating a tool to extract sample sizes from published studies

Research experience

Norwegian School of Sports Science

Norway

RESEARCH INTERNSHIP (UNPAID)

2018

- Together with Pr. Bjørn Harald, I investigated the use of the 1080 Sprint resistance device in swimming to measure power-velocity profiles and estimate drag characteristics in swimmers.

Inland Norway University of Applied Sciences

Norway

RESEARCH INTERNSHIP (UNPAID)

2017

- Together with my supervisor Pr. Bent Rønnestad and my colleague Arthur Bossi, I investigated the effects of two high-intensity interval training (HIIT) protocols on maximal oxygen uptake ($\text{VO}_{2\text{max}}$) in highly trained cyclists. The study involved detailed physiological assessments, including lactate threshold testing, $\text{VO}_{2\text{max}}$ measurements, and cycling economy evaluations.

University of Granada

Spain

RESEARCH INTERNSHIP (UNPAID)

2015-2016

- Together with my supervisor Pr. Raúl Arellano, I contributed to race analysis and the evaluation of swimmers' dry-land performance profiles. Additionally, I assessed propulsive force using the 30-second tethered swimming test with a load cell force measurement system.

Talks

Charles Sturt University

METASCIENCE SERIES

2025

- Discussed whether research published in sports and exercise science journals complies with the Declaration of Helsinki, particularly in light of recent projects highlighting replication and reproducibility issues that contribute to research waste. The slides are available here: <https://osf.io/bzp4s/files>

Open Research Summer School at King's College London

WORKSHOP ON PAPERCHECK

2025

- Gave a presentation about the tool Papercheck and then led a workshop on how to use it, including practical examples. The workshop materials are available here: <https://osf.io/r8fbd/>

Danish Reproducibility Network

DANISH REPRODUCIBILITY NETWORK MEETUP

2025

- Gave a talk about the benefits of preregistration and Registered Reports when conducting confirmatory studies. The slides are available at <https://osf.io/tveh8/>

Eindhoven University of Technology

LUNCH MEETUP FOR THE OPEN SCIENCE COMMUNITY

2025

- Gave a talk about the benefits of preregistration and Registered Reports when conducting confirmatory studies. The slides are available at <https://osf.io/tveh8/>

University Medical Center Groningen

NLRN PRE-SYMPOSIUM FOR YOUNG META-SCIENTISTS

2024

- Presented the findings from one of my PhD projects where we examined publication bias and average statistical power in sports and exercise science research

Eindhoven University of Technology

PAUL MEEHL GRADUATE SCHOOL PHD DAY CONFERENCE

2024

- Presented the findings from one of my PhD projects where we examined the reporting practices and reproducibility of a priori power analyses in sports and exercise science research

Setanta College

WORKSHOP ON ENDURANCE PERFORMANCE

2021-2023

- Conducted a workshop on the physiological determinants of endurance performance and team sports and conducted a lactate-threshold test to estimate training zones based on blood lactate concentrations

Kumming Hiageng Physical Training Base

WORKSHOP ON 1080 SPRINT RESISTANCE DEVICE

2019

- Conducted a workshop on the use of the 1080 Sprint resistance device to measure power-velocity profiles and estimate drag in swimmers.

Grants

Dutch Research Council

REPLICATION STUDIES

2026

- Assess the reproducibility of power analyses in large-scale replication projects. See project details at <https://doi.org/10.61686/FSWWF35053>

Eindhoven University of Technology

IE&IS ESA EDUCATION INNOVATION GRANT

2024

- Funding to develop an R package designed to assist master's students and supervisors in performing automatic checks to prevent statistical errors and enforce best research practices