

**Information on Postgraduate Research Studentship:**

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| **Faculty:** Education, Health and Human Sciences and Institute for Lifecourse Development |
| **Lead Supervisor: Prof Fernando Naclerio** |
| **Project Title:** Using different methodologies to maximise strength training outcomes in athletes and general population: Integration of the load-velocity profile and perceptual response |

**About the Project:** Strength training programmes have been traditionally designed using a two-part method: (1) undertaking a dynamic maximal strength test [e.g., 1 repetition maximum (1RM)] and then designing submaximal relative loads based upon the initial 1RM (e.g., 85% of 1RM for strength or 60% 1RM for muscle endurance) or (2) use the criterion of repetition maximum (RM) targets (e.g., 5RM for strength, or 15RM for muscular endurance). Alternative methodologies based on subjective methods of autoregulation (e.g., repetitions in reserve, Ratings of Perceived Exertion, or by the measurement of movement velocity are innovative individualised approaches to design and control strength training programmes.

The velocity-based method establishes thresholds considering the gradual decrease in the exercise velocity occurring as the exercise sets progress over the workout. Therefore, maintaining the targeted velocity range while exercising with a given load is a meaningful factor impacting training outcomes. Similarly, the use of the perceptual response to estimate loading zones and monitor changes in movement velocity has been also proposed as a useful valid measure of exercise intensity and physiological exertion during resistance exercises. Indeed, previous studies conducted in our laboratory demonstrated the suitability of the OMNI-RES 0-10 perceptual scale to differentiate loading zones and identify changes in the movement velocity in upper- and lower-body resistance exercises.

**Aims:** (I) To explore the best methodological approach to design and control resistance training programmes for improving functional performance and muscle hypertrophy in physically active individuals. (II) To compare the effectiveness of the following methods to promote athletic performance over medium (4 to 6 weeks) and long-term (>6 to 16 weeks) interventions, (i) Relative load estimation (%1RM); (ii) Load-repetition maximum target; (iii) Velocity based training; (iv) Perceptual response-based training

If you would like to discuss this opportunity and the PhD project before applying, please contact Professor Fernando Naclerio (Professor in Strength and Conditioning and Sports Nutrition) f.j.naclerio@gre.ac.uk or Dr Marcos Seijo [Senior Lecturer in Exercise Physiology] M.Seijo@greenwich.ac.uk

**Duration: 3 years Full-Time Study or 6 years Part-Time Study. Type: Self-Funded**

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| ***Person Specification of Essential (E) or Desirable (D) requirements:***  |
| ***Criteria:*** | ***E or D***  |
| ***Education and Training:***  |
| • 1st Class or 2nd class, First Division (Upper Second Class) Honours Degree or a taught Master’s degree with a minimum average of 60% in all areas of assessment (UK or UK equivalent)  | **E** page2image12104page2image13008 |
| • For those whose first language is not English and/or if from a country where English is not the majority spoken language (as recognised by the UKBA), a language proficiency score of at least IELTS 6.5 (in all elements of the test) or an equivalent UK VISA and Immigration secure English Language Test is required, unless the degree above was taught in English **and** obtained in a majority English speaking country, e.g., UK, USA, Australia, New Zealand, etc, as recognised by the UKBA.  | **E**  |
| ***Experience & Skills:***  |
| • Previous experience of undertaking research in sports exercise and science (e.g., undergraduate or taught Master’s dissertation)  | **E**  |
| • Knowledge of methods used in sport and exercise science research  | **E**  |
| • Good writing skills  | **E**  |
| • Good quantitative / qualitative skills  | **E**  |
| ***Personal Attributes:***  |
| • Understands the fundamental differences between a taught degree and a research degree in terms of approach and personal discipline/motivation  | **E**  |
| • Able to, under guidance, complete independent work successfully  | **E**  |
| ***Other Requirements:***  |
| • A PhD project research proposal that is related to the research area  | **E**  |

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| **Closing date for applications:** applications are accepted all year round |
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| **For further information contact:** ***E-mail:*** ***f.j.naclerio@gre.ac.uk*** ***and*** M.Seijo@greenwich.ac.uk |

\*please complete the text marked in red ink according to you PhD project area

**How to Apply:**

Please read this information before making an application. Information on the application process is available at: https://www.gre.ac.uk/research/study/apply/application-process. Applications need to be made online via this link. **No other form of application will be considered**.

All applications **must include** the following information. Applications not containing these documents will not be considered.

1. Personal statement outlining the motivation for a PhD and this particular project
2. Research proposal (about 1500 words) related to the subject topic \*
3. A CV including 2 referees \* (one ideally being from a dissertation supervisor)
4. Academic qualification certificates/transcripts and IELTs/English Language certificate if you are an international applicant or if English is not your first language or you are from a country where English is not the majority spoken language as defined by the UK Border Agency \*

\**upload to the qualification section of the application form. Attachments must be a PDF format.*

Before submitting your application, you are encouraged to liaise with the Lead Supervisor on the details above.