**Reasoning of dissertation topic and competency of potential supervisor for admission onto joint LSU and TU doctoral studies in 2020**

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| **Area of research (title and code)** | **Nature sciences N010** |
| **Field of research (title and code)** | **Biology** |
| **Topic of research** | **Sport Coaching** |
| **Institution** | **Lithuanian Sports University** |

**Potential supervisor**

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| **Pedagogical and scientific degree** | **Name, surname** | **Academic position** |
| PhD | Daniele Conte | Senior Researcher |

**Short reasoning of proposed dissertation topic**

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| **Title** |
| Investigating recovery strategies to optimize performance, sleep and well-being in basketball |
| **Short research description (including aims and objectives) (maximum 1500 characters).**  This PhD project will focus on the analysis of different recovery strategies to optimize basketball players’ performance, sleep and well-being. The main aims of this project will be to carry out intervention studies using recovery strategies (e.g. massage, stretching, cold-water therapy, shower etc.) on players’ direct performance (i.e. changes in workload), sleeping patterns and well-being measured with objective and subjective methods across basketball games played in close succession (i.e. during the in-season phase or in tournament). |
| **Relevance of the problem, its novelty at national and international level (maximum 1500 characters).**  A relatively little number of investigations assessed the effect of several recovery strategies on basketball performance and well-being (Delextrat et al., 2013, 2014; Montgomery et al., 2008). Montgomery et al. (2008) documented the beneficial effect of cold-water immersion compared to the ingestion of carbohydrate and the compression garments on basketball performance tests in a 3-day basketball tournament. Additionally, Delextrat et al. (2013, 2014) showed a positive effect of both massage therapy and cold-water immersion on CMJ performance and perceived fatigue in the 24h after a basketball game. However, these papers mainly focused on indirect measures of performance, while the analysis of direct performance measures such as the analysis of changes in workload during consecutive basketball games is still unknown. Additionally, to date, no information is available about the effect of these recovery strategies on players’ sleep behaviors. This lack of information calls for future studies in this area, which will have a huge impact on basketball within Lithuanian borders, since basketball is the most famous sport, and worldwide. Indeed, this project aims at providing information for basketball practitioners and sport scientists about the most important recovery strategies to adopt following basketball games.  *Reference*  Delextrat A, Calleja-González J, Hippocrate A, et al. Effects of sports massage and intermittent cold-water immersion on recovery from matches by basketball players. J Sports Sci. 2013;31:11–19.  Delextrat A, Hippocrate A, Leddington-Wright S, et al. Including stretches to a massage routine improves recovery from official matches in basketball players. J Strength Cond Res. 2014;28:716–727.  Montgomery PG, Pyne DB, Hopkins WG, et al. The effect of recovery strategies on physical performance and cumulative fatigue in competitive basketball. J Sports Sci. 2008;26:1135–1145 |
| **Research methods and possibilities for conducting these studies (maximum 1500 characters).**  This project will consist of intervention studies following a randomized cross-over design including one or more experimental groups (recovery interventions) in comparison to control groups. The players’ performance will be collected during official games to increase the ecological validity of the studies using the Catapult Clearsky system, heart-rate monitors and session rating of perceived exertion questionnaires. Sleeping patterns will be measured subjectively and objectively using questionnaires and the actigraph system. Additionally, players’ readiness and well-being will be collected with previously adopted questionnaires and via heart-rate variability (Lukonaitiene et al., 2020).  The Lithuanian Sports University laboratories are already equipped with all the necessary instruments to conduct research except for the Actigrpah, which will be likely purchased whether strongly necessary.  The participants recruited for this project will be highly trained basketball players competing within the first and second Lithuanian basketball leagues (LKL and NKL).  Overall, this project has a high feasibility since it is not costly and the data collection will be locally developed (within Lithuanian borders).  *Reference*  Lukonaitienė, Inga, et al. Investigating the workload, readiness and physical performance changes during intensified 3-week preparation periods in female national Under18 and Under20 basketball teams. *Journal of Sports Sciences* (2020): 1-8. |
| **Please indicate the links between the proposed topic for the doctoral thesis and health promotion / physical therapy / sports study programs.**  The project will be integrated within the strategic research area “Modern Technology in Basketball Training”. Additionally, it will be strongly linked with the already existing bachelor and master’s degrees within LSU. In particular, the knowledge derived from these studies will be likely shared within the joint master’s degree International Basketball Coaching and Management and in particular the course Sport Scientist in Basketball. Furthermore, it should be noted that recovery is a topic taught across the LSU coaching bachelor and master’s degrees and in particular within the Strength and Conditioning specialization. |
| **Is the proposed topic for the doctoral thesis related to currently funded research projects?**  No |
| **Is the proposed topic for the doctoral thesis related to joint research with a foreign institution?**  At the moment no, but in case the project will be funded with a PhD scholarship and a valuable PhD candidate will be selected, the project has the potential to increase the PhD supervisor already existing collaboration with Dr. Aaron Scanlan at Central Queensland University, Australia. |

Currently I am supervisor of 2 doctoral students and co-supervisor of 1 doctoral student.

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| Supervisor |  |  |  | Daniele Conte |

(signature) (Name, surname)

Date 31.03.2020