

Postdoctoral Fellow in Sports Physiology

A postdoctoral position in sports physiology had become available at the Department of Physical Performance, **Norwegian School of Sport Sciences**, Oslo.

The Norwegian School of Sport Sciences (NSSS) is a Specialized University. NSSS holds a national responsibility to provide higher education and scientific research in its corresponding fields. NSSS was established in 1968 and has currently approx. 240 employees and 1400 students. The college has well developed facilities for teaching and research and there is now exciting R & D activities with international cooperation projects in a number of sports related areas.

For more information about NSSS, see www.nih.no □

The **Department of Physical Performance** has over of 30 employees in research and teaching, fellowships and engineering positions. The section has a special responsibility for teaching and research in sports skiing, swimming and orienteering, the integration of movement science learning and training theory and the basic biological sciences sport biomechanics (movement analysis, physiology and anatomy). The section has extremely well equipped laboratories for biomechanical and physiological studies in humans as well as for analysis of biological material (biochemistry and histochemistry).

Research area

Research has for years studied the processes that control the rest of the muscle's ability to develop power for eccentric strength workouts and after muscle damaging work. There are established protocols to follow the rest of the muscle's contractile properties and methods for measuring cellular changes in the recovery phase. Today, there are indications that heat shock proteins (also called stress proteins) play key roles in the recovery phase and that the infiltration of white blood cells is a central, larger damage in the muscles. Moreover, we know that the production of free radicals (oxidative stress) plays a role both for the destruction that is obtained by muscle activity with great force development and the adaptations that occur in muscles with exercise. Ingestion of large amounts of antioxidants can potentially have both positive and negative effects in the muscles. On the one hand, a large intake of antioxidants in theory reduce the extent of the damage at more extreme work protocols, and on the other hand it can inhibit training adaptations as less oxidative stress will lead to reduced signaling in important signal paths involved in the muscle adaptation processes to training. We would therefore continue to examine the importance of supplementation with antioxidants on the proposed mechanisms in both the extreme protocols and in normal strength training protocols. Central to these studies is the effect of changes in muscle contractile properties, heat shock protein responses, inflammation process and the degree of muscle growth with resistance training.

Plan for the scientific work

Applicants for the position will continue to work within the described research and work. The applicant shall, in cooperation with the academic community prepare a detailed project description within the schedule. It is expected that the successful candidate will be able to complete the project during the employment period.

Requirements for competence

Applicants must have a doctoral degree (PhD) and have a scientific background that is relevant to the project. More specifically, there are requirements for good knowledge and experience with implementation of projects that included muscle biopsy and further analysis of muscle tissue. Applicants should have good experience with histochemistry methods (analysis of muscle biopsies) and immunological methods (such as western blot and ELISA). Further requirements are imposed to the expertise in training doctrine, especially strength training, both in theory and practice.

Applicants must be able to document research experience in the problem areas that are relevant to the research area as described above. It is an advantage if the applicant can document the interest and professional involvement in efforts to strengthen the scientific basis for understanding the performance capacity of athletes.

Applicants must document experience with teaching and advising at the university or college level.

Postdoctoral position is open to applicants who speak Norwegian, Danish, Swedish or English as working languages.

Selection criteria

First and foremost:

- Experience with the requested research methods and work within the described research and the work

Plus:

- Examinations (relevance and character)
- Scientific and educational qualifications
- Publications
- Personal fitness

Working Conditions

Wages and other working conditions offered by the state's rates, "stillingskode 1352 postdoc". The appointment is on the conditions of public officials in

Norway. We have compulsory membership in the Government Pension Fund. Postdoctoral position is a fixed term with a timeframe of **4 years** with 25% teaching duty.

The workplace will normally be Norwegian School of Sport Sciences. In special cases, where the experimental part can better be performed in other laboratories, exemption of residency may be granted. This also applies for stays in research centers abroad.

Contacts

Interested applicants are advised to contact the academic community in preparing the application. □□

Further details can be obtained by contacting

Contact person / subject:

Project leader: Truls Raastad, tel. +47 23 26 23 28

Head of Department: Jan Cabri, tel. +47 23 26 23 20

Contact / Management:

Personal Adviser: Hanne Skjøllås Nygaard, tel. +47 23 26 20 59

Closing date: 30 November 2009 (electronic registration at www.nih.no).

In addition to the electronic registered through our website, the applicant must submit within the time limit **four copies** of:

- Project (max 10 pages)
- CV, diplomas, certificates and other attachments that are relevant to the position
- List of published work and work that is under preparation

This should be numbered and sorted into four piles.

Application with attachments sent to the following address:

Norwegian School of Sport Sciences, Human Resources and Finance Department, PO Box 4014 Ullevål Stadion, 0806 Oslo, Norway. □