AGILITATEURS POST –DOCTORAT

UNIVERSITY OF ANGERS
ESTER / LAREMA

Post-Doctorat
Models of job-exposure matrices for biomechanical constraints and health effects

Branche d'Activité Professionnelle : A
N° emploi type : A1A41
Titre emploi type : Post-Doctorant.e en analyse de données

Presentation of the University of Angers

In the heart of a region known for its quality of life, the University of Angers -UA, the 3rd largest employer in the area, offers an environment conducive to the development of its staff and students. The UA is a multidisciplinary university with a strong health sciences component, with more than 23,000 students spread over 3 campuses in Angers (Belle-Beille, Saint-Serge and Santé) and 2 regional campuses (in Cholet and Saumur). It comprises 7 components including an in-house engineering school), with 30 research units and federative structures of research.
Thanks to many innovative projects and its openness to the world, the UA enables everyone to evolve in a stimulating environment. Its annual budget is €140 million (including €115 million in payroll).
The UA has more than 1000 faculty and 2700 staff. UA is looking for engaged and innovative post-doctoral researchers. Do you identify with the values of innovation, global citizenship, collegiality, and impactful research? Join us !

Job offer characteristic

Date of potential assignment: September 2020
Duration of contract : 1 year, renewable 1 to 2 years.
Work quota : 100%
Gross monthly salary: approximatively 2 650 € gross per month
Site : LAREMA UMR CNRS 6093 - ESTER team IRSET, University of Angers.
Supervision : LAREMA: P. Graczyk (Principal), M. Escobar-Bach (Auxiliary), ESTER: A. Descatha (Principal), Y. Roquelaure (Auxiliary)

Description of unit and place of the agent in the unit(s) organization

Occupational health issues are of growing importance due to intensified working conditions, increasing multiple exposures, and the ageing of the working population. IRSET has strengthened its occupational health research potential with the creation in 2017 of Team 10, called "Epidemiology in Occupational Health and ERgonomy" (ESTER) at the University of Angers. The team studies a broad range of occupational health questions from etiology to prevention, and is structured around four research themes: musculoskeletal disorders, psychosocial factors at work, cancer, and respiratory diseases. There are strong overlaps and interactions between these themes, including: (1) etiological research on occupational determinants of health, (2) evaluation of occupational exposures ("ergo-exposology"), (3) evaluation of contributions to social inequalities in health, and (4) integrated prevention interventions.

In one project (TEC-TOP), the person recruited as a post-doctoral fellow will carry out work on optimizing predictive models of musculoskeletal disorders using job-exposure matrices. The direct supervisor is Pr A. Descatha, in collaboration with Ester's statistical team. Mathematical aspects of research will occur in close collaboration with the Laboratory of Mathematics of the University of Angers LAREMA, UMR CNRS 6093 and its unit of Analysis, Probablity, and Statistics directed by F. Panloup.
This work will also associate the CNAM with its MeSUR team (Kevin Jean), specialized in modeling and statistics, and with the Healthy Work Center at Washington University in St Louis, USA with an occupational health team with expertise in musculoskeletal disorders and job-exposure matrices (Bradley Evanoff, Ann Marie Dale, and Ryan Colvin).

Missions and activities

As previously mentioned, within the framework of a project (TEC-TOP), a post-doc will have the task to establish and optimize predictive models of a common health condition, musculoskeletal disorders, using job-exposure matrices. The two main scientific missions will be the development of predictive models based on simulations and real data in order to test hypotheses, and to synthesize new observations and hypotheses.

Mission 1: To establish models, based on simulated data. To clarify exposure-disease relationships.
- Activity 1: Short versus long latency of exposure
- Activity 2: Long versus short duration of exposure
- Activity 3: Comparing intensity versus duration at equivalent cumulative dose
- Activity 4: Interaction with age, BMI, other co-morbidities

Mission 2: To establish models, based on real data, using large population datasets. To synthesize.
- Activity 1: Short versus long latency of exposure
- Activity 2: Long versus short duration of exposure
- Activity 3: Comparing intensity versus duration at equivalent cumulative dose
- Activity 4: Interaction with age, BMI, other co-morbidities

Skills

Knowledge:

- **Mathematical statistics**
- **English language proficiency**

Practice :

- **Statistical modeling**
- **Data Simulation**

Being :

- **Collaboration in a team and communication with other professionals**
- **Ability to work independently**

Training

PhD (Doctorate in science or similar)

Spéciality : Statistics, Applied mathematics, statistical modeling

Previous Experience

None (young PhDs knowing to work independently are welcome)

Recrutement modality and econtact

alexis.descatha@inserm.fr

piotr.graczyk@univ-angers.fr

mikael.escobar-bach@univ-angers.fr

Administrative contact : Valerie Fierens
+33 241 73 59 12 , valerie.fierens@univ-angers.fr