PhD position in Hereditary Cancer Genetics

A PhD position in “Solving rare hereditary colorectal cancer and polyposis syndromes” is available at the Institute of Human Genetics, University of Bonn Medical School, Germany.

Job description:
It has been estimated that approximately 25-30% of the colorectal cancer (CRC) cases may result from a genetic predisposition. A young age of onset and the presence of high numbers of gastrointestinal polyps (polyposis) argue for a strong causal contribution of genetic factors. However, in only ~10% of CRC cases high-penetrant germline mutations are identified. This suggests that further research is warranted to capture the entire spectrum of genetic predisposition.

The recently awarded five year multicentre research program ‘Solving the unsolved rare diseases’ (Solve-RD), operating under the European Commission’s Horizon 2020 framework, allows us and our partners across Europe to further expand our activities on the identification of novel causative genes for early onset CRC and polyposis predisposition. During this PhD project the successful applicant will contribute to the characterisation of novel cancer predisposing genes and risk alleles via the work-up of germline mutations identified through re-analysis of exome and genome data, histologic subclassification of tumours using deep learning techniques, and determination of the mutational profiles of carcinomas and polyps from patients with suspected hereditary tumour syndrome. The applicant will be involved in state-of-the-art sequencing technologies, the handling and analysis of high throughput genetic data (bioinformatics workflow, filter software, data mining, pathway analysis), and validation of findings.

The planned start date for this four year position is October 1st, 2018. The candidate will be integrated into the research-oriented training program for PhD students at the Bonn International Graduate School “Clinical and Population Science” (BIGS CPS. The salary will be determined in accordance with the German salary scale TV-L E13 (65%).

Tasks and responsibilities:
- Design and perform scientific research in the area of cancer genomics
- Present findings at local and (inter)national scientific meetings
- Collaborate with researchers within the European Reference Network (ERN) Genturis
- Work in an interdisciplinary team with students / scientists to discuss, plan and perform research
- Perform part of the work outwards (in particular in Munich and Nijmegen, The Netherlands)
- Finish the project with the completion of a scientific dissertation

Profile:
Applicants should hold a Diploma or Master degree in Biology, Molecular Genetics, Molecular Bio-medicine or a related subject. The Institute seeks an enthusiastic candidate with a strong interest in oncology and genome research. Experience with next-generation sequencing (NGS) technologies, bioinformatics, and statistical analysis would be an advantage. The candidate should be willing to spend part of the PhD project at one of the collaborating institutes of the Solve-RD consortium. Candidates should have good social and communication skills, fluency in English, a critical scientific attitude, and the ability to work both independently as well as in an interdisciplinary team.
The Institute of Human Genetics and the Genomics platform at the Life&Brain Center are members of a national NGS competence center (West German Genome Center) and offer excellent multidisciplinary, team-oriented research environments with extensive opportunities for individual development. PhD students are provided with supportive mentoring. The Institute and the Genomics platform have collaborations with the Institute for Genome Statistics and Bioinformatics (IGSB), other departments at the university and leading national / international research groups.

The University of Bonn is committed to diversity and equal opportunity. It is certified as a family-friendly university. It aims to increase the proportion of women in areas where women are under-represented and to promote their careers in particular. It therefore urges women with relevant qualifications to apply. Applications will be handled in accordance with the Landesgleichstellungsgesetz (State Equality Act). Applications from suitable individuals with a certified serious disability and those of equal status are particularly welcome.

All queries concerning the project and applications should refer to the application number 303_2018 until 31st July and be sent by email only to

PhD-polyposis@uni-bonn.de

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