UNIVERSITY OF TARTU
Institute of Genomics

seeks for

Senior Research Fellow, group leader position in Interdisciplinary Research in Genomics

Deadline: 03.01.2019

Field of Study (Speciality)
Interdisciplinary research in genomics

Who we are
Institute of Genomics is a research institute of University of Tartu, which is the oldest, largest and the only classical university in Estonia. University of Tartu is Estonia's leading center of research and training and currently ranks among the top 2 percent of the world's best universities and belongs to the top 1% of the world's most-cited universities and research institutions in 10 fields (incl. clinical medicine, molecular biology and genetics).
The Institute of Genomics was formed in 2018 through a merger of the Estonian Genome Center and the Estonian Biocentre bringing together world class expertise in medical, population and evolutionary genomics. We host the Estonian Biobank (www.geenivaramu.ee) which will have 150 000 participants by the end of 2018 and is connected to national health etc registries for phenotypes. We run a brand-new ancient DNA laboratory, a core facility for DNA/RNA sequencing and genotyping and have access to a High Performance Computing center (www.hpc.ut.ee). We publish widely in top journals and sport a vibrant and international research community of 70 researchers and students.

Who do we need
We are looking for a brilliant scientist to establish and lead an interdisciplinary research group in genomics guided evolutionary medicine unlocking synergy between the large scale population based biobank, computational, population and medical genomics.

Duties and responsibilities
Establishing and leading an interdisciplinary research group in genomics guided evolutionary medicine unlocking synergy between large scale population based biobank, computational genomics, population and medical genetics. The secured funding allows to hire three researchers, three postdocs and three PhD students to complete the team.
The main task of the position holder is to unlock and promote synergy both in terms of advancing basic science and technology, and delivering research results that cross the boundaries of established research directions, thereby creating a new frontier of science at the host institution. She/he is also expected to make significant contributions in developing Ph.D. study curricula. The latter is expected to gain from both the advancement of interdisciplinary research and the bridging of research and science-based entrepreneurship

Required qualification
PhD or an equivalent qualification.

Required experience
R4 (https://euraxess.ec.europa.eu/europe/career-development/training-researchers/research-profiles-descriptors) level researcher with outstanding track record in at least two or more of the following and related fields: computational genomics, statistics, epidemiology, functional genomics, medical genetics, population genetics, genomics technology development, and/or clinical science. Successful candidate should demonstrate excellent track record in obtaining research funding from EU level competitive funding programs, in leading research units, and in supervising other researchers and students.

What do we offer
The recruitment package includes a competitive salary, fully funded positions for three researchers, three post-docs and three PhD students to complete the team. Additional 200 000 EUR is available for research costs. It is a 4.5 year position starting 1 March 2019 to 31 August 2023, which can be extended if successful.

Further information
Please do not hesitate contacting:
Dr. Mait Metspalu, Institute of genomics, director, PI of the project
Dr. Andres Salumets, Institute of clinical medicine, WP leader
Dr. Tõnu Esko, Institute of genomics, head of Estonian Genome Center
Ms. Merit Keritzberg, project manager
Ms. Merilin Raud, assistant

www.genomics.ut.ee

Additional remarks
For the full description of the project and ERA Chair roles, please contact the contact persons listed above. Here we give a concise summary of the mission, expected impact, tasks and rights of the ERA Chair to be recruited.

General background
The position is aimed at applying advancements in genomic medicine in an evolutionarily-aware framework to account for different evolutionary pathways of populations which have led to differences in susceptibility to common diseases. This requires in-depth knowledge about genetic risk factors for diverse ethnic groups, and relevant tools to highlight the underlying genetic predisposition to diseases in complex human populations. For this reason, we will bring together the scientific expertise in three institutions: the Estonian Biocentre (EBC) and the Estonian Genome Center (EGC) which were consolidated to form the Institute of Genomics at University of Tartu (IGUT) in January 2018, and the Institute of Clinical Medicine (ICM) of the same university. The synergy between the three scientific hubs will create research capacity required for tackling the abovementioned aim. This capacity will be established to apply a holistic approach to understand the evolutionary driving forces that have led to common diseases; develop disease risk prediction models applicable in different populations, and explore the means of translating these findings into a suitable input for everyday clinical practice.
All three partners have unique resources such as biobanks, modern facilities and equipment. The EGC develops and manages **a population-based, longitudinal biobank representing about 5% of Estonia's adult population** (52,000 participants), established in 2000. The whole cohort of the biobank is fully genetically characterized by whole-genome genotyping assays, 3,000 individuals are additionally whole-genome and 2,500 whole-exome sequenced. Additional 100,000 participants are being recruited and genotyped in 2018. The data repository is linked with national health registries and hospital databases for up-to-date phenotypic information. The return of individual genomic results (such as polygenic risk scores,

high impact alleles and clinically actionable mutations) to biobank donors has started, and strengthening the collaboration with the ICM is instrumental in translating basic research to clinical practice. At the same time, the EBC maintains a sizable sample bank of over 25,000 human DNA samples from hundreds of populations from Eurasia and beyond, which will be critical in establishing the evolutionary driving forces of human complex diseases.

Mission and impact

The ERA Chair position is expected to further interdisciplinary research tentatively named evolutionarily-aware medicine. Since numerous gene variants contribute to the differences in human conditions including diseases, the understanding of genetic variation beyond registering the differences and their disease associations is crucial for revealing the etiology of the diseases. It is through evolution – the process of change to the genetic diversity patterns brought upon by interaction with the environment, i.e. natural selection and random genetic drift, effects of which are manifested through differential demographic histories of human populations – that we have arrived where we are today, where some genetic variants make you predisposed to become sick, some protect you and most have probably no notable role. It is therefore pivotal that the fields of evolutionary biology, modern genomics and medical science work together rather than each in their separate realms. While the recent turmoil-development of genomics has fuelled explosive advancements in several related fields individually, there is a lag in interdisciplinary research, which also contributes to the difficulties in translating basic research results into clinical practice and viable high-profit science-based business ideas.

Main tasks

Establishing and leading an interdisciplinary research group unlocking synergy between large scale population based biobank, computational genomics, population and medical genetics.
The ERA Chair will have essential role together with the PI and the Project Management Board in the selection process of the ERA Chair team members.

Rights of the ERA Chair

The ERA Chair holder will be entitled to performance pay schemes based on her/his success in competitive research funding programs at all levels. Other rights and responsibilities of the ERA Chair will include:

- Right to make vital decisions about human resource management, e.g. right to make proposals about employment and dismissal of new team members under her/his direct coordination (but within the guidelines set by UT about academic career management and subject to relevant legislative acts);
- Responsibility for establishing and supervising her/his own research team;
- Right to make resource allocation decisions in close cooperation with the Project Management Board.

How to apply

Applications should include a CV, Motivation letter and Research agenda including contacts of two references. In your publication list, please explain briefly the relevance of your most important work. Applications should be sent to personal@ut.ee.

Further Information

See Jobs at www.genomics.ut.ee for full listing
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