

Post-doc position in Data Science, Biostatistical Bioinformatics and Computational biology

Description

The interdisciplinary BIO3 team (bio3.giga.ulg.ac.be/) is looking for an enthusiastic and highly motivated post-doc data scientist with a multidisciplinary background in machine learning/biostatistics, statistical genetics/molecular biology, and biotechnology/bioinformatics (or equivalent spectrum).

The project aims to study **how genetic factors contribute to dementia**. The specific work that recently received NIH funding will use data from UK's own Alzheimer's Disease Research Center (ADRC). Additional data will come from other ADRCs — the National Institute on Aging funds 33 centers across the U.S. — and from other dementia research consortia. The successful post-doctoral candidate will be located at the University of Liège in Belgium and is expected to collaborate closely with co-investigators from UK. More information about the project's context can be retrieved via <https://medicine.uky.edu/news/uk-researchers-receive-funding-study-how-genetic-2023-06-16t08-18-35>.

BIO3 is a highly dynamic and flexible group with core areas of expertise including biostatistics, biomedicine and bioinformatics. The mission of BIO3 is to help biomedical researchers carry out their investigations and analyze their data, as well as designing new statistical and bioinformatics methods whenever they are needed. Algorithm optimization and computational methods are primarily developed in the context of precision medicine at the interface of systems medicine and translational science. The team's motto: "To raise new questions, new possibilities, to regard old problems from a new angle, requires creative imagination and marks real advance in science" (A Einstein)

The BIO3 lab is part of the GIGA biomedical research center of the University of Liège (<http://www.giga.uliege.be/>). GIGA was established in 2007 at the University of Liège as an interdisciplinary research center in biomedical sciences whose mission is advanced medical innovation. The institute encompasses more than 500 members (PI, senior researchers, post-doctoral scientists, thesis students, technicians) with expertise in medical genomics, in-silico medicine, neuroscience, oncology, infection and immunity, and cardiovascular sciences.

The offer:

- A contract for three years in an affordable, lively and welcoming environment
- A high-profile research project with a high impact on precision medicine and precision public health
- A modern, international and well-equipped research environment
- A position that is immediately available

Selected publications by BIO3 members

- [netANOVA: novel graph clustering technique with significance assessment via hierarchical ANOVA](#). Duroux D, Van Steen K. *Brief Bioinform*. 2023 Mar 19;24(2):bbad029. doi: 10.1093/bib/bbad029.
- [Interpretable network-guided epistasis detection](#). Duroux D, Climente-González H, Azencott CA, Van Steen K. *Gigascience*. 2022 Feb 4;11:giab093. doi: 10.1093/gigascience/giab093.
- [Deeper insights into long-term survival heterogeneity of pancreatic ductal adenocarcinoma \(PDAC\) patients using integrative individual- and group-level transcriptome network analyses](#). Bhardwaj A, Josse C, Van Daele D, Poulet C, Chavez M, Struman I, Van Steen K. *Sci Rep*. 2022 Jun 30;12(1):11027. doi: 10.1038/s41598-022-14592-1.

- [The AIME registry for artificial intelligence in biomedical research.](#)
Matschinske J, Alcaraz N, Benis A, Golebiewski M, Grimm DG, Heumos L, Kacprowski T, Lazareva O, List M, Louadi Z, Pauling JK, Pfeifer N, Röttger R, Schwämmle V, Sturm G, Traverso A, Van Steen K, de Freitas MV, Villalba Silva GC, Wee L, Wenke NK, Zanin M, Zolotareva O, Baumbach J, Blumenthal DB. *Nat Methods*. 2021 Oct;18(10):1128-1131. doi: 10.1038/s41592-021-01241-0.
- [Male-specific epistasis between WWC1 and TLN2 genes is associated with Alzheimer's disease.](#)
Gusareva ES, Twizere JC, Slegers K, Dourlen P, Abisambra JF, Meier S, Cloyd R, Weiss B, Dermaut B, Bessonov K, van der Lee SJ, Carrasquillo MM, Katsumata Y, Cherkaoui M, Asselbergh B, Ikram MA, Mayeux R, Farrer LA, Haines JL, Pericak-Vance MA, Schellenberg GD; Genetic and Environmental Risk in Alzheimer's Disease 1 consortium (GERAD1); Alzheimer's Disease Genetics Consortium (ADGC); European Alzheimer Disease Initiative Investigators (EADI1 Consortium); Sims R, Williams J, Amouyel P, van Duijn CM, Ertekin-Taner N, Van Broeckhoven C, Dequiedt F, Fardo DW, Lambert JC, **Van Steen K**. *Neurobiol Aging*. 2018 Dec;72:188.e3-188.e12. doi: 10.1016/j.neurobiolaging.2018.08.001. Epub 2018 Aug 9.
- [Genome-wide association interaction analysis for Alzheimer's disease.](#)
Gusareva ES, Carrasquillo MM, Bellenguez C, Cuyvers E, Colon S, Graff-Radford NR, Petersen RC, Dickson DW, Mahachie John JM, Bessonov K, Van Broeckhoven C; GERAD1 Consortium; Harold D, Williams J, Amouyel P, Slegers K, Ertekin-Taner N, Lambert JC, Van Steen K. *Neurobiol Aging*. 2014 Nov;35(11):2436-2443. doi: 10.1016/j.neurobiolaging.2014.05.014. Epub 2014 May 28.
- [Genomic screening and replication using the same data set in family-based association testing.](#)
Van Steen K, McQueen MB, Herbert A, Raby B, Lyon H, Demeo DL, Murphy A, Su J, Datta S, Rosenow C, Christman M, Silverman EK, Laird NM, Weiss ST, Lange C. *Nat Genet*. 2005 Jul;37(7):683-91. doi: 10.1038/ng1582. Epub 2005 Jun 5.
- [Human recombinant erythropoietin and quality of life: a wonder drug or something to wonder about?](#)
Bottomley A, Thomas R, Van Steen K, Flechtner H, Djulbegovic B. *Lancet Oncol*. 2002 Mar;3(3):145-53. doi: 10.1016/s1470-2045(02)00677-0.

Required education

Appointment to a post-doctoral position requires that the applicant has a PhD within the position's specifications, as mentioned before, at the time of employment decision. The doctoral degree should have been obtained no more than five years before the start of the position. Extensions are possible under certain circumstances, such as childbirth and adoption. Importantly, the candidate should be in a situation of international mobility: he/she should not have worked or lived in Belgium for more than 24 months during the three years preceding his/her start date.

Other requirements

- You are proficient in R/Bioconductor packages and scripting/programming languages (Bash, Perl,...).
- You are familiar with Linux environments and computing clusters.
- You have expertise in Network Medicine and Big Omics Data analyses.
- You have excellent communication skills, including in written and oral English.
- You can work independently and as part of an international team.

Procedure

Please provide a cover letter in which you describe yourself and explain your interest in the position and your long-term career perspectives, a CV including information about your education, previous work experience and expertise, and two references with contact information.

Applications (cover letter and detailed CV) with the subject title "Post-doc position in Data Science, Biostatistical Bioinformatics and Computational biology" should be submitted to rh.giga@uliege.be

Deadline for application: open until filled