



The Faculty of Agricultural Sciences at the Georg-August University Göttingen seeks to fill a

Temporary professorship with tenure track “Breeding Informatics” (Professorial Salary Scale W2)

within the framework of a new

“Centre for Integrated Breeding”

at the earliest possible date.

The professorship is part of a “Center for Integrated Breeding Studies” which is unique in Europe. This center is presently in the development stage und will bring together knowledge from plant- and animal-breeding with contributions from natural sciences as well as social sciences in order to establish an internationally leading role in this field. The establishment of the Center is being supported by leading German companies in the fields of animal and plant breeding.

Profile in research and teaching

The professorship will devote itself specifically to the development of concepts and methods based on bioinformatics for the use of data from genome sequencing and high-throughput genotyping in breeding.

At present, extremely large amounts of Data (“Big Data”) are supplied by the advent of high-throughput technologies such as array-based SNP genotyping and Next Generation Sequencing combined with increasingly automated phenotyping platforms in plant and animal breeding. The efficient utilisation of these data for decisions related to breeding presuppose the development of new methods which combine approaches from bioinformatics and biostatistics with basic fields of breeding research such as quantitative genetics, population genetics and selection theory. The main focus of the professorship for breeding informatics should primarily cover the informatics-related aspect of this profile, i. e. all aspects of managing, combining and efficiently analysing large amounts of data which stem from a breeding context and are to be used for decisions in breeding. As the challenges presented by bioinformatics are very similar in all fields of



breeding, the professorship will fulfil a decisive bridging function between animal and plant breeding including forest genetics. It is thus of central importance for the Centre for Integrated Breeding.

In teaching, the professorship will contribute to the research oriented MSc-programme “Integrated Plant and Animal Breeding” which is to be established. This contribution should consist of lectures as well as practical exercises in the field of methods of bioinformatics as applied to breeding. After the existing temporary professorship “Biometrics and Bioinformatics” (Prof. Dr. J. Gertheiss) is terminated in 2017, the professorship will offer the basic lecture “Mathematics and Statistics” as part of the BSc-course in Agricultural Sciences as well as other lectures and classes about statistics. Additional teaching commitments for other courses in agricultural sciences are possible according to the special qualifications of the incumbent. The professorship will also significantly participate in teaching within the framework of a graduate school to be established at a later point.

Integration of the professorship into the main research areas of the faculty and the university

The development plan of the Faculty of Agricultural Sciences names the strengthening of breeding research as one of the main challenges. In 2014, the Presidential Board of the university and companies active in plant and animal breeding signed an agreement for a public private partnership to establish a Center for Integrated Breeding at the University of Göttingen.

The demand for products of animal and plant origin will increase very rapidly in the coming decades. This requires a sustainable increase of agricultural production and entails a great challenge for agricultural research. Seeds and varieties of plants and the genetics of livestock are the basis of the production chain, so that animal and plant breeding will be of even higher importance in the future than at the present time. The innovative power of breeding extends along the entire agricultural value chain from characterising and utilising genetic resources to supplying sufficient amounts of high quality products such as food, feed and fuel. The focus on important aspects of developments in breeding such as protection of the environment and climate as well as animal welfare is steadily increasing.

Next-generation breeding strategies demand an efficient combination of classical breeding based on the phenotype with high throughput methods of molecular genetics. In order to utilise the technological leap in molecular genetics for breeding research, a substantial effort is necessary to develop the theoretical framework of quantitative genetics, population genetics, breeding methods and bioinformatics. As a result, the methodological foundations of animal and plant breeding are increasingly converging. At the same time, there is a significant lack of qualified scientists in the field of quantitative breeding methods so that it is extremely difficult to fill corresponding posts in research and industry with qualified graduates.



The University of Göttingen is internationally known as the origin of important innovations in the areas of plant breeding (i. e. hybrid rapeseed) and animal breeding (e. g. the Göttingen Minipig). The recent past has seen considerable changes in breeding research which were caused by technological innovations. Göttingen played a major role in these changes, especially in the areas of quantitative genetics and genome analysis. This offers optimal possibilities to strengthen the research location by establishing a “Center for Integrated Breeding” at the Georg-August-University in Göttingen in close cooperation with plant and animal breeding companies. The methodological profile of the center will be broadened by involving the Faculties of Forest Sciences and Forest Ecology and the Faculty of Biology and Psychology.

The professorship is expected to cooperate with the “Center for Computational Sciences”.

Integration into externally funded research and teaching networks

It is planned to integrate the professorship into a DFG priority programme ‘Selection at work - The dynamics of genetic variation in managed populations’ which is in the application stage.

The professorship is expected to take part in developing a concept for a graduate school after the Center for Integrated Breeding has been established and to involve itself in the application for funding through the Deutsche Forschungsgemeinschaft.

Core endowments of the professorship

The professorship will be endowed with the staff positions customary at the Faculty of Agricultural Sciences, i. e. a position for a research assistant and 1,5 positions for technical staff (including secretarial staff). Additional positions can be granted from the staff pool of the Department of Animal Sciences if the requirement is made plausible. The professorship is equipped with an annual basic allowance for research and takes part in the performance-related funding system of the Faculty of Agricultural Sciences. On a medium-term basis, it is planned to house all the professorships of the Center for Integrated Breeding in a new facility on the Northern Campus of the university. In addition, funding is available for the initial equipping and the start-up phase of the professorship. These funds will be allocated according to the research profile of the incumbent.

Expected qualifications

- A visibility in national and international research literature in accordance with the career stage.
- Teaching experience in English and/or German in accordance with the career stage.



- Willingness to participate in strategies for internationalisation in research and teaching.

Contact Person: [Prof. Dr. Henner Simianer](#)

We expressly welcome applications from abroad. Under certain circumstances, the position may be filled on a part-time basis. The University of Göttingen strives to increase its proportion of female staff in fields where women are underrepresented and expressly encourages qualified women to apply. Severely disabled persons with the appropriate qualifications will be favoured. Disabled persons with equivalent qualification will be given preference.

Applications including a CV with a representation of the applicant's academic education and career, publications and teaching record should be submitted electronically no later than 19. April 2015. [Application portal](#)