

Position of the Board of the Faculty of Science and Engineering

Comments on the recommendations of the research assessment report Mathematics (2009-2014)

1. Tenure track system

Recommendation PRC: *The university is strongly recommended to reformulate the requirements for tenure trackers, in a way which takes into account the fact that excellent projects in mathematical sciences may not be successful in obtaining grants. At least the departments should be able to adapt criteria to the specifics of the discipline.*

The tenure-track system in mathematics is part of a general RUG policy. We agree with the committee that the Tenure Track system is a valuable tool in attracting ambitious researchers by giving them a clear opportunity for their research career. Part of the criteria for promotion in the TT-system concern research funding. Since the funding landscape for mathematics offers less than average opportunities, the institute has made a plea for more flexibility in the TT-system. Currently, the Board of the Faculty of Science and Engineering (FSE) is reviewing the rules and regulations of the tenure track system and the funding criteria for promotion are an important aspect of this evaluation.

2. Fragmentation of mathematics

Recommendation PRC: *'It is suggested that the JBI makes a strategy plan that combines the existing small research lines, and makes sure that staff members have a chance to collaborate with others. The research quality is heterogeneous and strong efforts should be made to improve in this direction. It is recommended to amalgamate the programmes Mathematics and Applied Mathematics, and their subdivisions into research lines. Firstly, dynamical systems runs through both. Secondly, the Mathematics programme is doing a considerable range of applications. Thirdly, the DAGM research line is already an amalgam of a substantial dynamical systems group with various others. The division into Mathematics and Applied Mathematics does not appear to serve any purpose other than to separate responsibility for running the undergraduate degree courses.'*

In line with the recommendations of the committee, mathematics in Groningen is further integrating its research lines, in particular the mathematics and applied mathematics groups will merge into a single mathematics unit. The institute will appoint new staff on the boundary of current research lines to further integrate them: we mention in particular research lines with a systems theme, such as System & Control and Dynamical Systems, for which Groningen is internationally well-known. The new Center for Cognitive Systems and Materials within the Faculty of Science and Engineering will give excellent opportunities for joint appointments across the mathematics and applied mathematics boundary and joint PhD projects will be established as part of the Data Science and System Complexity Centre. Finally, all mathematics staff is expected to teach both in the mathematics and applied mathematics programmes.

3. **Societal impact**

Recommendation PRC: *'The JBI has a very good chance to have strong societal impact, but should increase its efforts in this direction as a whole.'*

The institute is currently actively developing a valorisation strategy. This will be a two-pronged approach, focusing on outreach and valorisation. On the one hand mathematics Groningen plans to structurally streamline and increase the outreach activities. The aim is to make Groningen well-known for its mathematical outreach at various levels: to schools and prospective students, to the general public and to policy makers. On the other hand, mathematics Groningen will continue to improve the efforts of establishing collaborations with other disciplines and industry. For example, by organizing 'industry days' (meetings with companies to explore opportunities for collaboration) and concentrated involvement in collaborative opportunities, such as DSSC and CCSM we aim to expand the societal relevance of our research. Where possible and relevant, we will consider valorisation opportunities when attracting new members of staff.

4. **DSSC**

Recommendation PRC: *JBI should plan carefully what mathematics it wants to achieve in the Centre for data science and systems complexity. The JBI should use the opportunities of this centre for interdisciplinary research and funding.*

An important part of the valorization and research funding strategy of mathematics lies in its participation in the Data Science and System Complexity Centre (DSSC) and the Centre for Cognitive Systems and Materials (CCSM). Strategic involvement in suitable joint projects and joint grant applications will be able to make mathematics visible and attractive to outside partners and funding agencies. Mathematics is a founding member of the DSSC and one of the principal contributors in the recent COFUND proposal for a large number of interdisciplinary PhD students. Moreover, with the new positions funded through the CCSM initiative, mathematics will be able to explore new interdisciplinary research opportunities.

5. **Viability**

Recommendation PRC: *The JBI should insist that the new allocation model, that will be beneficial for the financing of mathematics, is implemented without delay.*

The viability of mathematics in Groningen is closely connected to future strategic investments in the department. In 2015 the institute has drawn up a strategic hiring plan that espouses the aim of strengthening a typical Groningen profile on the one hand and to expand popular teaching fields on the other. With respect to the former, mathematics Groningen will focus on presenting a unified Systems profile, which will incorporate the stochastics, systems and control and dynamical systems groups. Strategic hirings between these three groups will combat compartmentalization and fragmentation and be able to present a clear Groningen unified

outlook. Furthermore, additions to algebra and geometry will safeguard these popular fields for the increasing student numbers. In fact, these growing student numbers allow mathematics to grow steadily, to make use of strategic opportunities while at the same time present a more coherent Groningen face.