

Response to Bernoulli PRC report

April 2023

The Faculty Board has reviewed the assessment report of the Peer Review Committee (PRC) for the evaluation of Bernoulli Institute for Mathematics, Computer Science and Artificial Intelligence (dated January 15, 2023) with great interest. We are very pleased with the outcomes of the evaluation, in particular the committee's observation that the merger of JBI and ALICE into BI in 2018 has worked out very well and that the Institute is on the right path to becoming a fully cohesive research unit, which supports and stimulates interdisciplinary research between the three disciplines.

The PRC provided several recommendations which are addressed in the response from the BI Board and Director below. As Faculty Board, we support the recommendations from the PRC and the response from the BI Board (see below), and look forward to the implementation of the recommendations in the coming period.

In addition to the response from BI, the Faculty Board would like to provide their comments on the PRC's recommendations. It is hoped that with the implementation of the new Informatica sectorplan from the Ministry of Education that several of the recommendations from the report can be addressed.

Masterplan:

The Faculty Board supports BI in developing their masterplan for the Institute and is dedicated to support and assist this process. The Board advises to consider the support from the new Informatica sectorplan in developing the masterplan, with attention to how the Institute can best make use of the funding available for implementing these plans.

HR Policy

The new Career Paths in Science and Engineering policy is almost completed. Since the writing of the PRC report, there have been several sessions organized with the Institutes and (young) staff from the Faculty and we have worked this input into the final version of the policy. The concerns raised by the PRC have been noted and in our view addressed successfully in this updated version. Relevant is that the career track with an educational focus is continuing all the way to full professorship, in parallel with the traditional track with a research focus. The financial difference between the (typical) starting packages of Assistant Professors with an educational and a research focus should not be interpreted as an implicit disadvantage for the educational track. Instead, it reflects the difference between the tracks, in which the person on the research track is expected to immediately build up their own research group, which is supported in the starting package with the salary of a PhD student, while the person on the educational track is embedded in an existing team in which they are immediately given the supervision task for one of the PhD students in that team.

Gender Diversity in Mathematics (level of PhD students and academic staff positions) is also a point of attention for our Faculty and we will carefully observe the developments within the Institute. For instance, we will encourage selecting female candidates for any open (PhD) vacancies.

Capacity Issues

We acknowledge the capacity issues at Bernoulli Institute related to staff and laboratory space. The delay in delivery of the Feringa building adds to the capacity issues within the Faculty. During a recent administrative meeting with BI we discussed the capacity issues and the Faculty Board is looking forward to receiving the Institute's plan for upon which we can look for appropriate solutions to address these.

Sincerely, on behalf of the Faculty Board

Prof. Joost Frenken, Dean FSE

Institute response to PRC review report Bernoulli Institute

April 2023

General

The institute is pleased with the quality and results of the assessment. All the people who interacted with the committee agreed it was a positive and respectful experience, in which topics were discussed that are relevant for the institute. The committee concluded that the merger between the former ALICE and JBI institutes has been successful. In addition, it stated that the scientific quality of the institute is very good and comparable to other institutes in the Netherlands. The report makes a number of recommendations for the next steps that the institute should focus on. The institute considers these recommendations to be very helpful for its future development and success. We will now discuss the recommendations of the committee, and which steps the institute is planning to address them.

Master Plan

The committee recommends that the institute works on a Master Plan, in which it identifies the goals it wants to focus on in the near and far future. This plan should show how a balance is struck between disciplinary and interdisciplinary research, and should be a guide for future hires, international partners, funding efforts, and societal partnerships.

We agree with the committee on the utility of a plan, and have in fact already started working on it. The plan will consist of a number of interconnected subplans, with at least scientific goals, a funding plan, a staffing plan, a housing plan, a societal impact plan and a social plan.

The development of a Master Plan was initiated in December 2022, and was approved by the FSE Dean and the Bernoulli Board. Following discussions in the Board, the BI Director, the Chair of the BI Board and the Vice-Chair created separate Bernoulli Committees to focus on the various subplans. Each Committee consists of approximately four members: a representative from each discipline, at different career levels, and a representative of the Board. The committees are supported by the BI scientific coordinator, the business manager and other support staff. In consultation with the staff the Committees would identify goals and action lines, and make recommendations to the BI Board. The FSE Board will also be consulted concerning these discussions. The Master Plan is intended to be completed before the end of 2023.

The general questions on which each committee focuses on are:

- **Scientific challenges:** What are the scientific challenges that we foresee in the next 5 to 10 years that we want to focus our efforts on? How do they fit into the three institute themes? In this respect, the BI will also pay attention to maintaining our core expertise in mathematics, computer science and artificial intelligence.
- **Education:** What do we need to teach our own programs, how do we want them to collaborate, and what role do we want to play in teaching outside the institute (Jantine Tammes school, PDEng, service teaching mathematics, other service teaching).
- **Staffing:** What do we need to achieve the scientific and education goals, including support staff. **Housing:** What surface and distribution of space does the BI need to conduct its research and education in normal conditions? How do we use the available space as efficiently as possible?

- Societal impact: What are our main collaboration partners, how are we strengthening collaborations with them? What are possible new partners? How do we facilitate public outreach?
- Funding: How do we help our staff in getting funding? What are opportunities for funding that are underused? How do we influence the funding agenda?
- Diversity: How to encourage community building? How to improve diversity and inclusion? How to create social safety?

Organizational structure

The committee advises to simplify the organizational structure of the institute. This advice can probably be attributed to a miscommunication in the self-report, in which the impression is given that the six disciplinary research strengths are part of the organization. Instead, they have been defined for the purpose of the sector plans, where computer science and mathematics had separate plans. Apart from that they do not play a role in the organization of the institute or the decision making process with respect to research and education. For research, decision-making lies with the BI Board and the BI research groups. For education, decision-making lies with the educational directors and in the discussions between them and staff, which take place in the departmental staff meetings.

Nevertheless, it is useful and necessary to evaluate the current subdivision in three departments. The benefits are that it divides the organizational workload, and that it splits the institute along the lines of the educational programs. Indeed, meetings within the departments are most of the time about education. The potential downside of the departments is that it hinders collaboration, and fosters competition for resources. To counter this, collaboration is stimulated through interdisciplinary themes. This is something that still needs to develop, and will take time. Competition for resources cannot be prevented in any kind of governance, but at this moment there is a strong atmosphere of collaboration and common goals.

A Finances Committee currently works towards a more transparent organisation of the institute's finances, attention being paid to how the separation of the overall BI finances across the institute, the departments and the groups, should be handled in the future.

Communication

The PRC observes that communication within the BI is not optimal. The BI acknowledges that communication can be an issue in an institute with a large number of new staff. Therefore it is committed to making extra efforts to improve communication within the institute.

HR Policy

The committee is concerned about potential inequalities in career perspectives for education and research oriented tracks. The FSE has almost finalized the new version of the Career Paths in Science, by also integrating the input collected from (young) staff from the Faculty, including the BI. There is strong potential for staff members in the educational track to excel in educational projects that are very important for the quality of education, but that have been shunned by the "regular", now research tenure trackers because they do not help in building a portfolio for promotion. Moreover, as the FSE points out, the career track with an educational focus is continuing all the way to full professorship, in parallel with the traditional track with a research

focus. The financial difference between the (typical) starting packages of Assistant Professors with an educational and a research focus should not be interpreted as an implicit disadvantage for the educational track. Instead, it reflects the difference between the tracks, in which the person on the research track is expected to immediately build up their own research group, which is supported in the starting package with the salary of a PhD student, while the person on the educational track is embedded in an existing team in which they are immediately given the supervision task for one of the PhD students in that team.

A second concern is diversity at the BI and the institute agrees that actions towards having a more diverse staff should be implemented. Diversity is an urgent matter and the BI has established in discussions with the dean a concrete plan on how to address this issue in the coming years. More precisely, the faculty board and the institute are currently discussing plans to boost the number of female staff members. The FSE agreed to encourage selecting female candidates for any open (PhD) vacancies. In Mathematics, for example, there are plans to hire female staff by an extra Rosalind Franklin round aiming at recruiting at least one full professor, and to ensure at least one female staff member in each base unit.

The promotion of other forms of diversity will by no means be neglected. To discuss a concrete action plan, we have established a diversity committee. The committee began by identifying and recommending the inclusion of the types of identity that are important for the BI staff: from nationality, to ethnicity, gender, sexuality, disability, and neurodiversity. While diversity across nationality is well represented, gender and other types of diversity are not. The Committee considers that diversity policies should be influential in recruitment and promotion of staff at the BI, to reflect the broader population demographics. Encouraging the diversity of the staff will also stimulate the diversity of the student body, as students relate to staff with whom they share identity markers.

The committee notes a lack of support for postdocs, and a concern about their teaching load. The latter is a consequence of the appointment of so-called “FSE-fellows”, postdocs with 30% education appointment. The faculty has acknowledged that problem, and no longer appoints them. The institute recognizes the lack of support, and will revive the initiative to start a postdoc council, which has faded out in the Covid period.

Capacity issues

The institute, in particular AI and CS, has suffered from a high teaching load, an issue that has also been raised in earlier evaluations. In the current evaluation period, the student numbers have risen again, forcing both AI and CS programs to apply for a numerus fixus. To remedy this, new staff has been and will be appointed. Despite that, the teaching load remains high, and an issue of concern.

Another concern is space, as acknowledged by the Peer Review Committee. With the acquisition of additional staff, the institute is running out of office space. In addition, according to the allocation models, the institute receives no space for lab facilities. Although not all of the institute’s members need lab space, a substantial number do, e.g., for robotics, experimental research visualization, etc. This space is needed for both research and teaching, and the lack of space hurts both. In addition, it has hampered the ability to attract new staff that sometimes

require space for their research that we are unable to offer. There is no solution yet for this, but the institute's Space Allocation Committee (one of the Master Plan committee) will present a plan in which it specifies the needs of the institute.

The FSE acknowledged the capacity issues at Bernoulli Institute related to staff and laboratory space and the FSE Board is waiting for the Institute's plan for space allocation, upon which the Faculty and the Institute can look for appropriate housing solutions.

Fundamental Research, Societal impact and Industry relations

The committee recommends that the institute develops a policy for societal impact and industry relations, but also stresses the need for fundamental disciplinary research in mathematics, computer science and artificial intelligence. The BI Societal Impact Committee acknowledges that our research clusters around applied or fundamental science, yet does not consider this aspect a threat but an opportunity to the institute's interrelated goals for impact, i.e.:

- Make people enthusiastic about science;
- Create learning communities that evolve from enthusiastic school pupils, to students and to future experts working in various ecosystems;
- Help these ecosystems push the horizon of their research and development.

The Committee is currently working on identifying strategic partners for outreach and industrial collaborations, which connect as much as possible both to the applied and the more fundamental research areas of the Institute. The long term vision of the Committee is to expose students to academic excellence and engage them with real industrial needs.