Maastricht University

Development Dialogue MSc Systems Biology

Date: Tuesday, 14 December 2021

Present

Yves Moreau	Chair panel	Julia Sewall	Programme director
Barbara Bakker	Panel member	Rachel Cavill	Chair EPC
Jildau Bouwman	Panel member	Michelle Moerel	EPC-member
Claudia de Buck	Panel student member	Chris Pawley	EPC-member
Peter Hildering	Academion	Michel Adriaens	BoE-member
		Robin Schormans	Project leader (minutes)

Agenda

The programme management has three questions of which it would like the input of the accreditation committee:

1. Programme scope: Could you please elaborate on your views on how we can clarify the human health scope as well as the expected biology/mathematics/computational science proficiency on courses and programme description?
2. Student inflow and recruitment: Do you have concrete suggestions to improve our student's recruitment efforts?
3. Strengthening our academic writing, programming and ethics training components: How could we strengthen these components? Could you share any best practices from other universities?

Minutes

1. The panel notes that whether the programme should expand in terms of scope, or should grow stronger in its current focus on human health, is up to the programme management. Nevertheless, the panel sees the current focus in human health as a very strong aspect of the programme, which also differentiates it from other related programmes in the Dutch educational landscape. Broadening the scope would have serious consequences as it requires the entire programme to be reconsidered, especially for core course skills needed for broader electives. The panel therefore suggests to make the current focus on human health more explicit.

2. Without a corresponding bachelor's programme, it is primarily a matter of time for the programme to increase inflow as reputation and visibility need to grow. However, to raise awareness and put the programme on the bachelor's student radar as a viable option, the panel suggests lecturers to promote the programme in bachelor's studies in a tangible way. For instance, a percentage of students with a background in biology might be perceptive to the fact they do not need to spend hours in a lab environment. Similarly, some students are perceptive to communication on career prospects. Groups of students who could also be targeted are those with a background in (bio)chemistry and physicist because of their ability for mathematical and molecular thinking, and students from technical universities who cannot pursue biomedical ambitions at their own institution. To reach the latter, strengthening research collaborations, inviting guest lecturers and exchanging interns are options. The panel sees the personal component of recruitment as important, as well as emphasising the human health focus in a sub title or slogan.

3. Programming is well incorporated into the programme, but needs to be made more explicit, including what languages are students being trained on and what is the proficiency level expected (for all students versus electives). More importantly, programming needs to

be added in the assessment, for instance by requiring and assessing an appendix with the script, code or model description in the master thesis. The panel also suggests copying existing elements from courses, such as adding scripts as required appendix, to the project and master thesis. Additionally, introducing students to standard (industry) tools and practices such as Git and Github will aid them later in their career.

In strengthening the ethics component in the programme, the panel sees two options with equal benefits. Having an independent course on ethics running parallel to other courses places real emphasis on it, but interweaving ethics into the current curriculum (after mapping where it is lacking) allows students to better relate it to practice when presented as a natural part of research. The panel suggests to deliver ethics in a tangible way, for instance by incorporating case studies in courses, or having lecturers who can draw the relationship to their own field and explain how an ethics committee operates, or by inviting different stakeholders (e.g. from the medical field, data science, industry etc.) when discussing ethical challenges. Moreover, ethics should be taught as an attitude towards science and (typical) uncertainty in research, to manage student expectations and fostering ethical behaviour. This requires practice, thus small assignments to make students reflective of their practice (e.g. by letting students unknowingly work with incomplete data) are welcomed, yet the panel recognises that teaching an attitude is difficult to incorporate into the programme.