WAGENINGEN
UNIVERSITY & RESEARCH

P.O. Box 9101 | 6700 HB Wageningen | The Netherlands

Position statement Executive Board
Wageningen University & Research

Regarding the EPS peer review assessment (2015-2021)

According to the Strategy Evaluation Protocol (SEP 2021-2027) the Graduate School Experimental Plant Sciences (EPS) and its associated research units have been evaluated. An assessment committee of independent experts assessed the performance of EPS and its associated research units based on a self-evaluation and a (hybrid) site visit.

The Executive Board has received the final report of the assessment committee, and has read it with interest. The Executive Board is very content that the committee concludes that EPS as a graduate school provides an excellent environment for early career scientists in terms of infrastructure and available know-how. Specifically for the research units associated with Wageningen University, the Executive Board is pleased that the quality of the research is considered as impressive. The Executive Board would like to thank the peer review committee for carrying out the evaluation.

The response to the main recommendations of the committee has been put together by EPS and the WU associated research units and the Executive Board has integrally accepted the response, in which is described how the recommendations will be addressed and how the outcomes of the research evaluation will be used to further strengthen EPS's performance. The Executive Board encourages EPS to further intensify the quest for all WU associated research units to come up with a common research strategy.

Also on a general (WGS-wide) level the committee makes very useful recommendations. We are in the middle of a 'Recognition and Rewards' trajectory and agree with the committee that following the outcome of that trajectory policies need to be implemented to promote the development of postdocs as independent researchers and policies to ameliorate the precarious position of postdocs on temporary contracts. Moreover, the Executive Board agrees that the duration of the PhD trajectory requires are undivided attention, and additional possibilities in monitoring to counteract delays in PhD trajectories will be investigated. Data Management in general is considered as important. Therefore standards and protocols for the organisation will be developed and we will train young scientists even more the coming years about the importance of good data. Progress on follow-up actions will be monitored in our yearly quality assurance cycle.

The assessment report together with the response to the recommendations will be published on the WUR website, together with summaries of the EPS self-evaluation reports and the case studies.

Wageningen
University & Research

DATE
December 19, 2022

OUR REFERENCE
2300516

POSTAL ADDRESS
P.O. Box 9101
6700 HB Wageningen
The Netherlands

VISITORS' ADDRESS
Wageningen Campus
Building 104
Droevendaalsesteeg 4
6708 PB Wageningen

INTERNET
www.wur.nl

CoC NUMBER
09098104

HANDLED BY
Pieter Munster

TELEPHONE
+31 (0) 317481686

EMAIL
pieter.munster@wur.nl

With kind regards,

Prof. dr Arthur P.J. Mol
Vice-president of the Executive Board

Response to main recommendations Graduate School EPS

Quality control

1. Unify the requirements for submitting a thesis at the level of EPS. Inform PhD candidates of these requirements before they start planning their trajectory, and help them come to a realistic understanding of how much time it will take to produce this output.

It may not be possible to unify the requirements for submitting a thesis at the level of EPS, because we are a collaborative national organisation where every institute has its own management structure and PhD regulations. However, we believe that within the Plant Sciences in the Netherlands the requirements for submitting a thesis are quite comparable. We do see a role for EPS to develop a shared vision on what is expected of our PhD candidates.

2. Give greater prominence to the appointment of additional (external) advisors in the early phases of the PhD trajectories within EPS.

We agree that the appointment of the external advisor at an early stage of the PhD trajectory is important and that it is also important for PhD candidates to take the initiative to organise regular meetings with their external advisors. We will develop procedures to stimulate PhD candidates from the non-Wageningen research groups to register so that they are then automatically required to choose an external advisor. In addition, we will implement measures to stimulate all our PhD candidates to organise regular (annual) meetings with their external advisors, and to make both the supervisors and the PhD candidates aware of the importance of the mentoring function of the external advisor .

3. Centralise the organisation of the meetings between PhDs and their advisory committees. If you cannot organise these meetings yourself, at least follow up whether they have taken place.

EPS does not have the required staff time available to take up such a large task. However, EPS does have a monitoring structure in place: PhD candidates are asked to hand in an annual report, describing their progress in research and education each year. This annual report could be used to report on meetings of PhDs with their supervisors. How to better monitor the progress of our PhD candidates will be an important focus in the coming years.

In addition, universities have a structure in place of obligatory progress & development meetings of supervisors with PhD candidates.

4. The duration of the PhD trajectory and the misuse of unemployment benefits to finish a thesis. Guarantee that supervisors feel responsible to make a timely submission and defence possible.

This is an important issue that has the attention of the university boards of our institutes. Recommendation 1 and 4 are linked and need to be considered together. The requirements for a PhD degree and expectations from both supervisor(s) and candidate need to fit within the time that is available for the PhD trajectory.

Courses

5. Improve the communication between EPS and the PhD candidates at the universities outside Wageningen.

Because of Covid-19 measures in the last two years our PhD candidates have been somewhat isolated at their respective institutes. With the lifting of the Covid-19 measures early this year we have started to organise live meetings again offering our members the opportunity to meet each other and the graduate school staff live. In the coming months, we will take up our regular visits to the research groups again that have not taken place since the start of Covid-19.

6. Where possible, respond to the demand of PhDs and postdocs for more advanced courses. Update your basic training in new technologies and latest approaches.

The graduate school regularly asks PhD candidates, postdocs, staff, and Educational committee for input on new courses to develop. We will continue to create ideas for new courses with these EPS councils and committees.

7. Train young researchers in such a way that they are aware of the importance of good data, and eager and capable turn data into knowledge.

We will continue our collaboration with the BioSB research school for bioinformatics and systems biology research, with ELIXIR, the European data infrastructure for the life sciences, and with the Wageningen

Data Competence Centre (WDCC). Courses and workshops on the importance of good data and the FAIR principles are available. We will advertise the importance of these courses to the EPS PhD candidates to stimulate participation in these courses.

8. Advertise your courses designed for PhDs and postdocs to technicians as well, who may also benefit from them.
We agree that the possibility to take part in our meetings and course programme is important for technicians as well. We will advocate this opportunity and will take measures to better include the technicians of our graduate school in our communication.

Postdocs

9. Give the Postdoc Council representation on the board of EPS. Grant it a similar status to the PhD council.
EPS very much supports this idea that has taken effect immediately: the postdoc council is now represented in the board of EPS as well as in the EPS research and education councils.

10. Give both the PhD and Postdoc councils a fixed budget that they can use at their own discretion.
Although EPS would be amenable to this suggestion, the PhD council members have already indicated that they are not in favour of a fixed budget. The PhD council members explained that they do not feel limited by the unfixed budget and are guided by the list of agreed-upon yearly activities that they organize. We are waiting to hear what the Postdoc council has decided on this issue.

11. Formulate and advocate a policy to promote postdocs' development as independent researchers, and support grant applications by postdocs. Where possible, give postdocs more support in developing their own independent career.
Currently the EPS postdocs at Wageningen University & Research upon registration with the graduate school get a format for making a Postdoc Career Development Plan and a Postdoc Roadmap with relevant information. The EPS Postdoc council will take up this issue further with the support of the EPS office. The EPS Postdoc council organizes workshops about various grants and career events where academics and former academics share their experiences. In addition, we will advertise the available education opportunities for postdocs more.

12. Give postdocs the opportunity to formally supervise PhD candidates as recognised co-supervisors whenever possible.
It is possible for postdocs to supervise PhD candidates. We believe that co-supervision by a postdoc should only be arranged if it is in the interest of the PhD candidate involved and should only be implemented with the approval of the PhD candidate, also taking into account that the postdoc may not be able to supervise the PhD candidate for the full duration of the PhD project.

13. Use your influence for a policy to ameliorate the position of postdocs, which can be difficult. For example, lobby for contract extensions for child care, as most PhDs already have.
Unfortunately, the graduate school has no influence on laws that dictate how long temporary staff members such as postdocs can be employed. The position of postdocs at universities can be a subject for discussion in the Universities of the Netherlands organisation (UvN). EPS can however support postdocs in finding their way in the Dutch childcare regulations; in finding their way in their careers; and in finding colleagues who are in the same situation such as through the postdoc council.

General

14. Strengthen collaborative bonds in the framework of EPS.
Our PIs are very active in finding collaborations as is exemplified by the large projects/programmes, such as the recently granted PlantXR programme in which multiple EPS groups are involved.

15. Work out common standards and protocols for data management.
We support that data management is important in research and this is also recognised at the universities involved in our graduate school. We will look into existing standards and protocols and make these available through our website.

16. Share established good practices with other graduate schools.
We do like the idea of exchanging good practices with other graduate schools. We are already actively

exchanging ideas and good practices with the Wageningen Graduate Schools but will start exchanging ideas with the local graduate schools at the other EPS institutes.

Response to main recommendations Research Units Graduate School EPS

1. Fiercely defend the current balance between basic and applied research.
The graduate school agrees that the balance between basic and applied science is very important and although our influence is limited, this will keep our attention in the next six years. We will continue funding for the EPS graduate programme that bridges applied and fundamental science and continue to advocate the importance of fundamental research.

2. Collaborate not only with the private sector, but also involve NGOs in strategic decisions and the choice of research topics. Using the foresight of all stakeholders will greatly enhance your chance of being societally relevant.
It is true the graduate school predominantly collaborates and interacts with the private sector as a stakeholder. For many national research programmes from NWO and Top Sectors, collaboration and co-funding from the private sector are compulsory. We shall identify NGOs as new stakeholders for our research and where relevant involve them in making strategic decisions.

3. Make research integrity an important issue at all levels of the research units. Securing scientific independence in contracts and codes of conduct is one thing, it should also be firmly planted in the minds of researchers.
Research integrity is part of our introduction course for new PhD candidates and is also addressed at other levels in the research units as a part of the university integrity structure. We support the idea of continuously addressing the issue of research integrity at all levels of the research units and we will actively offer ideas for this. In addition, we will investigate how we can further integrate research integrity in different parts of our training programme.

4. Draw a line between data storage and data management on the one hand, and data analysis on the other. With regard to the latter, decide what can best be done at the level of the graduate school.
We will continue with the Bioinformatics courses that are offered in our training programme, where data analysis and the proper way of collecting data are taught and will continue to include new developments in these courses. In addition, we will continue to offer (financial) support to PhD candidates in designing their experiments in collaboration with a Bioinformatics or Mathematics expert.

5. Consider targeted hiring of suitable candidates if a position for a principle investigator becomes available. Actively look for specific expertise and make use of your excellent international network.
This is a good suggestion, which will be followed up where possible.

6. Put a coaching and mentorship procedure in place for young scientists at all levels. Use the Utrecht Plant Biology Cluster as a source of inspiration.
Each Tenure Tracker at WU has a coach, usually the chair holder or more senior staff member. Coaching of staff in Tenure Track is specifically an employer's responsibility. However, we appreciate the suggestion to discuss best practices at other universities and learn from these procedures. We will raise this issue in our discussions with our university management.

7. Keep the teaching load for tenure trackers acceptable, even in the face of a peak in student numbers.
Teaching load for staff in tenure track is specifically an employer's responsibility. At WUR, tasks of tenure-trackers are roughly 40% teaching, 40% research, and 20% other. This balance is important for supporting the key tasks of a university. As a graduate school we are involved in the evaluation of tenure trackers and have the opportunity to guard this balance.

8. If you hire dedicated teaching staff, make sure that such lecturers remain well connected to the research, so that state-of-the-art science may continue to inspire students.
Indeed this is important. Lecturers are fully integrated in the research environment of the chair group, which guarantees that state-of-the-art science is included in the courses. Most of the staff members combine research and teaching.

9. For EPS-units outside Wageningen: be more proactive in recommending the services provided by EPS to your PhDs and postdocs.
Both research units and the EPS office will need to be more proactive in recommending the opportunities in EPS to our PhD candidates and postdocs.

10. Empower PhDs to take more control of their supervisory burden. Involve them in the selection process of their potential students.
The Training & Supervision Plan and the Postdoc Career Development Plan both encourage to discuss and write down the mutual expectations of the (direct) supervisor and the PhD candidate or postdoc, respectively. The graduate school will offer support to PhD candidates and postdocs through our courses and activities and allow them to find their way to supervisory courses.

11. Be aware that technicians are a key factor for a well-functioning research structure. Take special care to optimise working conditions for technicians.
We are certainly aware that technicians are a key factor for our research structure. We will endeavour to better involve technicians in our courses and activities. However, working conditions for technicians are the responsibility of the employer.

Response to recommendations Research Unit Biotic Interactions and Plant Health

1. Carry out your excellent plans for the future, particularly the intensification of your connections with the units Genome Biology and Plant Development and Adaptation and the application of novel imaging and sequencing technologies. Harness the synergy potential by stimulating collaboration within the unit and within EPS.
We are concerned about the strong focus on the division in clusters and units within Graduate Schools. The reason for this concern is that the most important innovation and synergy is to be realised between members of disciplines, which are now often placed in separate clusters/units and separate Graduate Schools. Such a focus on units implies that financial means are used to strengthen the research units as that is where you will be evaluated on,, while we are of the opinion that more strategic investments should be directed to promote research that requires the participation of more than one unit/cluster/Graduate School and less to increase coherence within clusters/units.

2. Take a growing lead in the establishment of international collaborative networks to develop new research directions and strengthen existing ones.
An important issue with developing new international research programs is the enormous time investment required from individual staff members. Despite experience of the groups with EU programs, it is always a challenging learning experience to coordinate the composition and writing of such a program, while other crucial tasks also need to be performed. We feel that this can be done much more efficiently, when WUR would seriously support capacity building by investing in an International Acquisition Hub, not only for general advice, but specifically for organisational input, writing and acquisition capacity. What we see now is that small companies try to fill this gap, but it is a major task of WUR itself (compare for instance how this is organized at INRAe).

3. Continue to validate quality over quantity of publications.
4. Continue to train students at different levels of their educational programme in the framework of collaborative research with industry.
5. Reinforce your core position within EPS through the planned biobank of plant-associated microbes. Take the lead in designing a joint strategy for the quality and handling of microbial collections within EPS.
Several activities are in progress. We are PI in the MiCRop gravitation program (together with both Amsterdam Universities, Utrecht University and NIOO) , where a "microbial bank" of rhizobacteria and fungi is being set up. The WUR Business Unit Bio-INT has collected a large number of plant viruses. Prof René van der Vlugt, working at Bio-INT and a special professor at Virology, is the coordinator for this virus bank. Within Bio-INT there is also a large bacteria, Phytophthora and Fusarium collection, so establishing a link with MiCRop appears useful.

6. Acquire data mining expertise in-house through strategic recruitment; it is too vital to be completely outsourced. Make sure that students and staff members engage in data analyses and data management.
7. Hold on to the upward curve in open access publications.
8. Continue to strengthen internal collaborations by creating tenure track positions in a common framework between the four chair groups.
See our response to no. 1

9. Further emphasise interaction between the chair groups by shared supervision of PhD students.
10. Allow new tenured staff time and space to grow. Encourage them to profit from the earlier generations while they are still available.
We fully agree with this recommendation but a few changes are needed in order to provide new tenured staff with time and space to grow. More financial means are needed for assistant professors in tenure track from general university means. The Go/No-Go decision for a fixed position should be more on qualitative aspects where current emphasis is too much on quantitative aspects (that would also be in line with the procedures at other universities in the Netherlands). In addition, more flexibility in tenure track is needed, to allow more individual choices and hence accommodate more diverse profiles.

11. Use future hiring opportunities to create a more diverse research community at the top level.

Response to recommendations Research Unit Genome Biology Unit

1. Improve the exchange of ideas within the unit. Already, each of the chair groups has begun to reach out. Proceed on this track. Try to bring all chair groups in the unit physically together, as this encourages spontaneous interaction.
This is indeed an important point. We have initiated joint staff meetings to discuss collaboration possibilities, joint applications etc. and have found a number of junior staff willing to organize biannual unit afternoons to discuss ongoing science and exchange ideas. Moreover, the unit has decided to invest in two collaborative projects, on recombination and (rose) pangenomics, which will act as hubs for further collaboration and sharing of equipment. Finally, the fact that Genetics, Biosystematics and Bioinformatics groups are now co-located supports spontaneous meetings, but Plant Breeding will likely not be able to physically join in the near future.

2.Foster new collaborations with other groups within EPS or at Wageningen University. Exploit synergies, share facilities and technologies. Do this in a structured way, and at different career levels.
We already share lab equipment and computer hardware and will continue to do so, also through joint acquisition of new equipment. New national funding programmes (sectorplan Biology) and major research initiatives (Plant-XR, the Institute for Advanced Studies for Photosynthetic Efficiency etc.) already bring various groups together and in their plans explicitly support cross-disciplinary connections, e.g. by hiring tenure trackers shared between two groups. While all chair groups in the GBU support this, the implementation will also depend on decisions made by the University Board on how to invest the extra funding.

3. Consider the use of state-of-the-art technologies other than genome sequencing, such as the higher order organization of DNA. Attract tenure track staff covering these emerging technologies.
A good suggestion. We will jointly invest in cytogenetics expertise, and have fruitful collaborations with other university groups on novel protocols (such as single-cell sequencing, with the Plant Development and Adaptation unit) and with colleagues at Wageningen Plant Research on state-of-the-art -omics technology (sequencing, protein-DNA/protein-protein interactions, metabolomics etc.). However, we agree that it makes sense to attract new staff that is up to speed with the latest technology.

4. Develop a coherent strategy for the choice of biological questions and models.
Given the breadth of the work in the groups involved it may be hard to arrive at a limited set of questions and models. Nevertheless, in the new research hubs (recombination and pangenomics) discussion has already started to bring focus to questions and approaches. Clearly, maintaining too many "biological systems" will be hard given available budgets. Yet, GBU addresses fundamental questions and concepts in evolution and genetics and these should arguably be addressed in more than just a few "classical" model systems. The rapid development of genome sequencing biology and genetics,

statistical, and bioinformatic analyses methodology will make it easier to strike the balance between this financial and logistic constraint and scientific urgency.

5. *In view of future retirements, adopt a well discussed strategy for hiring replacements and targeted recruitment.*
We already involve unit members in hiring committees, but will also discuss "white spots" in our portfolio in unit staff meetings to further strengthen collaboration. On the other hand, each group has to ensure their staff can contribute to fulfilling its disciplinary teaching mandate (*leeropdracht*). Targeted recruitment is indeed a good instrument and is increasingly supported at the Wageningen University level.

6. *Consider accessing each other's data sets. It will open up new, complex research questions. Make data management a priority for the next years.*
Our shared computing infrastructure offers opportunities for this, but is not fully exploited yet. We will bring our data stewards together to discuss improving this. The two new research hubs (recombination, pangenomics) could offer a good staging ground.

7. Make hands-on data management training a priority for the next years, in addition to the work of the data steward.
Data management training is important, but best taken up at the level of the graduate school and/or university. We can of course follow up on this in our groups by developing shared data management protocols.

8. Hold on to the upward curve in open access publications.
We definitely aim to publish all our work OA, making preprints available when open access journals are not appropriate or affordable.

Response to recommendations Research Unit Plant Development and Adaptation

1. Further intensify your quest for a common research strategy. Search for critical mass and scientific synergy.
The RU has started with shared meetings on a regular basis (4/year). Additionally, task forces have been appointed to help scientist of different members of the cluster with writing grants. Interactions will be further intensified by shared projects and co-supervision of PhD students. Two such projects have already started in 2022 using strategic university funding, for two other projects we have applied for funding through the research programme Plant-XR.

2. Consider your future needs in computational modelling, mathematics and biophysics. The open positions might provide excellent opportunities to address these needs.
Thanks for this suggestion. Understanding the importance of biophysics has been addressed in the meantime by appointing a personal professor in biophysics. With regards to modelling and mathematics, within WUR different groups already have a strong profile in these disciplines. These groups are involved in several new initiatives, including again Plant-XR in which all three groups within our RU participate. Additionally, long lasting collaborations with mathematical modelers of other universities within the EPS graduate school and outside are present. Thus, although we are certainly open to strengthening our research on this aspect, these developments make it less essential to appoint modelling or mathematicians in our own RU.

3. Hold on to the upward curve in open access publications.
4. Foster the internal dynamics in your excellent age pyramid.
5. Proceed with the task force that has been put in place to assist tenure trackers and postdoctoral researchers.