

# International Evaluation of the PhD Programme of the Graduate School of Health Sciences, University of Aarhus, Denmark

## ***Introduction***

The Graduate School of Health Sciences (GSHS), University of Aarhus, has initiated an international evaluation of the PhD Programme of the Graduate School. The evaluation involved the preparation of a report made by an international evaluation panel and containing a set of development-oriented results and recommendations.

The members of the international evaluation panel, and thus the authors of this report, were:

- Professor Stina Syrjänen, PhD, University of Turku, Finland
- Professor Hongquan Zhang, PhD, Peking School of Basic Medical Sciences, China
- Professor Neil Pearce, PhD, London School of Hygiene & Tropical Medicine, UK
- Senior Executive Officer Jakob Ousager, PhD, University of Southern Denmark

The main basis for the conclusions and recommendations in this report is the Graduate School's self evaluation report (December 2014) and the interviews conducted during the international evaluation panel's site visit at the University of Aarhus, Denmark, on April 13-15 2015.

In addition to the self evaluation report, and the interviews, the evaluation panel has had access to an extensive set of information including PhD theses, course evaluations, and the comprehensive report "Quality in the PhD process – a survey among PhD students at Aarhus University ([appendix A](#)).

The self evaluation report refers to the doctoral education quality framework defined by and shared among Aarhus University's four graduate schools. This framework involves four main categories: output, entry level requirements, input, and organisation. The evaluation panel finds this quality framework to be appropriate and useful. Therefore the conclusions and recommendations in the report are arranged according to these concepts.

## ***General comments and recommendations***

The panel's over all impression of the GSHS PhD Programme is that of a very well-driven, well-organized and competitive programme. The GSHS PhD Programme offers excellent opportunities for talented future researchers to pursue their ambitions of a career within academia or within other professions that require research competences.

There is a strong focus in the GSHS PhD Programme not only on the scientific quality of the PhD students' work but also on the importance of supporting the PhD students' development of generic competences relevant for an early stage researcher.

There is, off course, always room for improvement. But it is the evaluations panel's perception that challenges faced by the GSHS PhD Programme generally are of a kind that are fairly universal in doctoral education. The panel's recommendations given below should be seen in that light.

## ***Output***

It is the GSHS's ambition that PhD students should publish the result of their scientific work whenever it is possible and suitable and with the highest degree of impact. It is also intended that the graduates contribute significantly to the society by bringing their research competences to use in- and outside of academia both in Denmark and abroad.

## ***Comments***

The report states that PhD theses submitted to the GSHS contain on average 3,5 manuscripts and that the graduates each contributed to 8,4 publications (some presumably through co-authorships).

While the average numbers of manuscripts per thesis is 3,5 (with 1,6 published manuscripts at the time of submission of the thesis) there is no information of the range of numbers of papers per thesis. Also, it is unclear to what extent the remaining 1,9 manuscripts actually get published. Furthermore, there is no indication of the published manuscripts' bibliometric characteristics such as impact factor.

There are indications that graduates from the GSHS PhD Programme have very high post-PhD employment rates. However, there is not much evidence available concerning the specific nature of the employment obtained by the graduates. It would, of course, be particularly interesting to know to what extent competences acquired during the PhD education are brought to work by the graduate in, for instance, the clinical work.

From a 'client' point of view (the client here being key actors in the health care system) there appears to be a high degree of appreciation of the competences brought into the health care system by health professionals who have undergone research training via a PhD programme. It is the impression that PhD graduates, although they may not all continue to pursue a career as active researchers, nevertheless contribute significantly to improving the quality of health care, and promoting the practice of evidence based medicine, to the benefit of the patients.

## ***Recommendations***

The lack of evidence concerning the bibliometric characteristics or other forms of quantification of the PhD theses' and their embedded paper's scientific quality is a challenge shared by most graduate schools. However, it would strengthen the GSHS's position in an international setting if more solid evidence could be provided about both the quantity and the scientific quality of the PhD theses' contents.

It is also recommended to continue emphasizing the 'dual purpose' nature of PhD studies: publications are important, but so are the graduates' contributions to the health care system's general quality and to the promoting of EBM. This may be seen as a key benefit of the GSHS PhD Programme. Also the studies should provide the skills needed in work outside of university in addition to expertise in research work.

## ***Entry level requirements***

### *Vision*

It is the GSHS's ambition to enrol only the most talented and dedicated candidates and to accept only PhD project proposals of the highest quality and with a substantial scientific weight. It is also the GSHS's ambition to attract a larger proportion of applicants with an international background.

These ambitions are pursued via clear recruitment measures, policies, and procedures. The head of the PhD School and the heads of the Graduate Programmes are pivotal in these processes. The recruitment and project/applicant assessment also make good use of other faculty's specific expertise and of the administrative staff's practical assistance.

### *Comments*

It is the evaluation panel's perception that the assessment of PhD project proposals and of the applicants' qualifications is carried out with appropriate care and with the involvement of the necessary scientific expertise. Appropriate measures seem to be taken to avoid issues of potential ineligibility or conflicts of interests that might otherwise be a problem when researchers are appointed assessors of PhD projects proposed by their colleagues from the same institution.

The GSHS management has provided the evaluation panel with an overview of how the faculty stipends are allocated to the applicants. It appears that the allocation of funds (full stipends as well as 1/3-stipends) is based solely on the projects' quality and the applicants' qualifications, not taking into consideration any set distribution of the stipends among the graduate programmes and/or the departments.

The evaluation panel acknowledges the logic of these procedures and their underlying intentions, but is at the same time uncertain that it is actually possible to measure and compare the quality of projects and the qualification of the applicants across all the different areas of health research – and more so to do it free of “political” considerations.

It is in any case the panel's perception that the abovementioned procedures demand a very high degree of transparency in order to counteract the potentially less positive perceptions of these processes that might eventually emerge. It is not absolutely clear to the evaluation panel if this high degree of transparency is already established. However, judged by the panel's discussion with key stakeholders it appears that the processes, especially when it comes to the allocation of stipends, are not always perceived of as sufficiently transparent.

When it comes to the possibilities for attracting more international applicants the major obstacle appears to be the fact that applicants cannot apply for enrolment unless they have already established a good contact with their future main supervisor, and have worked closely with him or her and have developed a specific PhD project proposal. This requirement does inevitably favour Danish applicants, or other applicants who have already established good connections with the researchers connected to the GSHS. This is an issue that should be addressed some way or other. The evaluation panel shares the GSHS's perception that the ability to attract international PhD students is crucial, because the influx of highly talented international PhD students is expected to contribute significantly to the University's research environment as such.

The evaluation panel notes that there seem to be good possibilities for funding visits from potential PhD-students.

### *Recommendations*

The GSHS is recommended to consider establishing a project proposal review process that includes the use of external peer reviewers to further strengthen an already strong evaluation process.

Likewise the GSHS is recommended to consider ways to enhance the transparency of the assessment processes and especially of the stipend allocation distribution process. Or, if it is the GSHS management's estimate that the processes are in fact already as transparent as possible, then to consider ways to better advertise this transparency and to stress applicants' and supervisors' possibility of getting more insight into the processes and the results thereof. One such measure could be to provide easily accessible information about the recipients of stipends on the PhD School's website in addition to informing the individual recipients of stipends.

It is the panel's recommendation that the GSHS initiate a survey of how current international PhD students managed to identify a supervisor and to compose the PhD project proposal that is a requirement for applying for PhD enrolment. The knowledge acquired could be used to present examples of best practice that would be helpful for future applicants.

## ***Input***

### *Vision*

The GSHS has a strong focus on offering high quality courses, promoting good supervision, having a well-established monitoring system (progress reports) and generally advancing a good PhD study environment.

There is a particular interest in further advancing PhD students' mobility, both in terms of having more GSHS's students go abroad for stays at other research institutions, and in terms of attracting international PhD students.

### *Comments*

The GSHS and the graduate programmes offer a wide range of both highly specialised PhD courses and broader transferable skills/generic courses. There are elaborate approval and evaluation systems to support the quality control and quality development of the courses and of the course programme. The evaluation panel notes that a course for supervisors is now being (re)introduced, which is seen as a good initiative.

When it comes to mobility - both outbound and inbound - there appears to be room for improvement. This is a challenge shared with other Danish graduate schools. The evaluation panel's discussions with supervisors, students, and the international advisor support the impression that research visits abroad do contribute significantly to the individual PhD student's development as an early stage researcher. The evaluation panel also notes that the GSHS provides ample opportunities for PhD students to obtain funding for research visits abroad.

However, many students are at an age and in circumstances so that they find it difficult to spend periods overseas. Also, other work and training commitments (particularly clinical) may make this difficult. Still, going overseas for short periods during the PhD study period should be feasible to most PhD students.

Interdisciplinary studies are being encouraged, e.g. through students having co-supervisors from other fields, e.g. public health/clinical studies, although in the new structure, most clinical students are placed in the clinical section, even though there may be a public health co-supervisor. There are also some university centres that are cross-disciplinary in nature. Still, interdisciplinary work is particularly difficult for PhDs which tend to be more focussed. However, there are good interdisciplinary collaborations (epidemiological, clinical, basic science) in progress for several diseases including cancer, diabetes, and neurological disease. Therefore if these are encouraged, then individual PhDs can be focussed on a particular topic, but be part of a broader interdisciplinary collaboration.

The monitoring system with various forms of progress reports and mid-term evaluation is generally seen by both supervisors and students as a useful tool, although there appears to be some confusion and/or lack of knowledge about some of the practicalities and procedures.

Good supervision is clearly a necessary element for successful PhD education, as is students' active participation in the scholarly community. Some concerns may be raised when some supervisors have (too) many PhD students. Also, considering that supervision tasks may include a lot of work for the supervisor, it appears to be important to ensure that good supervisors are in fact given proper credit for their work.

#### *Recommendations*

The GSHS should continue the good work with progress evaluations, but this would probably benefit from an enhancement of information provided to both supervisors and PhD students. As an example, some students and supervisors seem to be not fully informed of what happens with the progress reports after submittal. This may cause unnecessary concerns.

It is recommended to try and enhance mobility by better advertisement of the ample funding possibilities. Likewise, it would be a good idea to publicise some of the good examples: students who have had good experiences with research visits abroad; students with families who have had shorter visits abroad. Research units should be encouraged to set up exchange agreements with likeminded research units abroad.

Good supervision may be supported by making sure that the good supervisors are given proper credit for their work. It is recommended to consider setting a limit on the number of students per supervisor and/or on the number of faculty stipends allocated to each supervisor, although this is obviously a delicate matter.

It is recommended that it be part of the GSHS's vision to further promote interdisciplinary research where appropriate. One way of doing this could be by promoting interdisciplinary PhD projects through the allocation of targeted funds.

The GSHS offers an impressive PhD course programme, but does not seem to have courses in career planning nor in writing of grant applications. Both career planning and training in writing grant proposals may be highly relevant for PhD students, especially in the last part of the programme. It is therefore recommended to consider adding courses in career planning and in writing grants proposals to the course programme.

## ***Organisation***

### *Vision*

The GSHS organisation is built to support the advancement of core values in PhD education. There is a specific focus on supporting a strong scientific environment and on an effective handling of the different processes related to application, enrolment and finalisation.

### *Comments*

It is the evaluation panel's impression that the GSHS has a very well-functioning organisation. There appears to be sufficient and highly qualified administrative support from the secretariat. In addition, there is good and relevant support from other administrative units, e.g. the international advisor and career advisor.

The close collaboration between the Head of the PhD School and the Heads of Graduate Programmes and between the Heads of Graduate Programmes and their respective departments appears to provide a very good linkage between the GSHS and the five departments.

The PhD student counsellor also appears to be an asset for the GSHS, although it is unclear to the panel to what extent there is actually a particularly high demand for counselling among PhD student as compared to, for instance, other early stage researchers. It is also unclear to what extent the PhD students and their supervisors are aware of the counselling opportunities offered by the counsellor.

The PhD Day provides good opportunities for PhD students (and their supervisors) to network across research units. However, the evaluation panel did get the impression that there is not a very close contact between PhD students in general. This could be an area with room for improvement.

### *Recommendations*

The most important recommendation is to allocate more resources to the enhancement of information to supervisors, applicants and other stakeholders about processes and initiatives in the Graduate School. It is the evaluation panel's impression that some or many of the GSHS's initiatives would prove even more fruitful if an extra effort was done to ensure better dissemination of knowledge about current practices and procedures.

The GSHS is also recommended to consider investigating the possibilities of further improving collaboration with other graduate schools, locally, nationally, and internationally. This could be in relation to courses, to collaboration on review systems, and on other areas.

Finally, the panel would suggest that the GSHS set up a seminar or other activity that would gather the stakeholders in a discussion both about the comments and recommendations given in this report and about what has come up in general during the GSHS's work with the evaluation.

**Appendix A: Information made available to the evaluation panel before and during the site visit**

1. Self-evaluation report from the Graduate School of Health, Aarhus University, December 2014
2. A list of dissertations approved in 2013
3. Ten dissertations approved in 2013 selected by the evaluation panel itself from the above list
4. Course descriptions and student evaluations concerning 10 PhD courses selected by the evaluation panel itself
5. Head of Graduate School of Health Lise Wogensen Bach's overview presentation 13<sup>th</sup> April 2015
6. Indicative terms of reference for work of the evaluation panel suggested by the Graduate School. 2014
7. Kim Jesper Hermann, Gitte Wichmann-Hansen and Torben K. Jensen: *"Quality in the PhD process – a survey among PhD students at Aarhus University"*. Centre for Teaching and Learning, School of Business and Social Sciences, Aarhus University 2014
8. The Course Calendar of the Graduate School of Health – descriptions of courses offered by the graduate school since 2010
9. Aarhus University Employment Surveys (since 2007)
10. The graduate school's recruiting web (for applicants)
11. The graduate school's internal web (for students, supervisors etc.) – containing all rules and regulations concerning the PhD programme + guides and forms for students, supervisors, assessment committees etc.
12. The Ministerial Order on PhD Studies and Degree
13. The Danish Bibliometric Research Indicator and PURE data on all PhD students and researchers
14. Link to Key figures on Aarhus University