International evaluation of
Copenhagen Graduate School of Health and Medical Sciences

November 2012

Background
In November 2011 the University of Copenhagen decided to fuse the Faculty of Health Sciences, the Faculty of Pharmacy and the veterinary part of the Faculty of Life Sciences into one faculty, the Faculty of Health and Medical Sciences. Similarly as of 1 January 2013 the graduate schools of the previous three faculties ("SUND", "FARMA" and "VET") are fusing to become a single graduate school, Copenhagen Graduate School of Health and Medical Sciences ("new SUND"). The new combined graduate school is expected to enrol more than 400 PhD students per year, and to have a total enrolment of about 1500 PhD students on 1 January 2013, of which approximately 71% come from SUND, 11% from FARMA and 18% from VET.

The new SUND will be led by an active researcher as Head of the Graduate School, reporting to the Vice-Dean of Research. The Head will be assisted by the Graduate School’s administration that handles all PhD students’ formal requirements as set out in the national regulations (the PhD Order) and further specified in the University and Faculty guidelines for PhD education.

In accordance with national regulations, the Faculty has asked for an international evaluation of the Graduate School with the following terms of reference:

- To carry out an evaluation that leads to the formulation of development-oriented results and recommendations that can be applied in the future by the Graduate School management. The point of reference of the evaluation is to be based on the “Standards for PhD Education in Biomedicine and Health Sciences in Europe” as outlined by ORPHEUS\(^1\), and other issues deemed relevant. The management of the Graduate School may encourage the panel to pay specific attention to issues important to the future development of the Graduate School.

Thus this evaluation report has two objectives. First, to review the three former graduate schools up to 2011 and the future plans for the new SUND. Second, to make recommendations for the future.

The appointed panel members were:

- Professor Daan Crommelin, Utrecht University, The Netherlands
- Professor Jonathan Elliott, Royal Veterinary College, London, UK
- Dr. Helke Hillebrand, EMBL, Germany
- Professor Seppo Meri, University of Helsinki, Finland.
- Professor Michael Mulvany, Aarhus University, Denmark (chairman)

\(^{1}\) Organisation for PhD Education in Biomedicine and Health Sciences in Europe
Basis for the evaluation report

The panel has been provided with self-evaluations from the three former graduate schools together with a wide variety of statistical information, description of the plans for the new fused Graduate School, budget details, description of the administration, description of administrative procedures, employment statistics, as well as random examples of admission applications, CVs of international PhD students, course contents and evaluations, half-year reports, theses and thesis assessments. Key points of the statistical information provided are shown in Appendix 1. In addition, the panel has been shown the results of a student questionnaire from the first half of 2012 (the results are summarized in Appendix 2).

From 22-24 November 2012, the panel performed a site-visit. Thanks to strong support from the administration the panel was able to interview a wide-variety of stakeholders, including the Vice-Dean for research, the heads of the former graduate schools, the Head of the new fused Graduate School and the Head of the PhD administration. Other interviews included some heads of graduate programmes, some supervisors, some administrative staff, some “PhD coordinators”, some members of the PhD committee, some PhD students (Danish and foreign), all chosen on a random basis by the chairman of the panel.

Evaluation and recommendations

1. Research environment

All three former graduate schools were based on strong research environments which were in general able to provide the setting for quality PhD research programmes. The criterion used was that the supervisor had a position of Professor or Associate Professor, or equivalent. It was not entirely clear to what extent the current research activities of the potential supervisors were assessed. At all three graduate schools there was emphasis on ethical issues through the introduction of compulsory courses on good research practice.

Recommendation for the new SUND

1.1 More emphasis should be placed on ensuring that all supervisors are able to provide a good quality research environment and network based on their active research programmes.

2. Outcomes

The former graduate schools were in full agreement that the outcome of a PhD education is both the research output and the competencies that will provide good employment opportunities. As regards research output, the panel has evaluated a random selection of theses and finds that their quality matches the international level. More details are shown in section 6. As regards employment opportunities, the panel has examined the employment statistics provided. They showed that only a minority of PhD graduates from 2009 are now unemployed (SUND: 0.5%, LIFE 3.7%, numbers not available for FARMA). A large proportion of these are in R&D (15%), higher education institutions (33%) or hospitals (26%). This suggests that at present, PhD programmes are providing the necessary skills. However, in the current labour market this may not continue to be the case. VET has held career days to provide PhD students with information about future employment opportunities, how to prepare job applications, and how to establish networks.

Recommendations for the new SUND

2.1 Career advice should be initiated at an early stage of all PhD programmes.

2.2 Career days should be held for all PhD students.

2.3 Better statistics should be obtained about the aspects of PhD education that are most relevant for subsequent employment.
2.4 An alumni network should be established to facilitate networking and identify competences needed by the labour market.

3. Admission policy and criteria

The criterion for enrolment has been that the applicant has the formal qualification (Master’s degree) and that the project, supervisor and programme plan are approved. At SUND, faculty stipends (about 20% of all stipends) were advertised openly and applicants were selected on the basis of applicant qualifications, the supervisor’s qualifications and the quality of the proposed projects. Subsequently, the successful applicants had then to apply for enrolment. For stipends based on external funds, all positions were – on the basis of Danish regulations – filled on the basis of some form for competitive application. However, the form varied and, since graduate schools are in principle not involved with appointments of students who are based on non-university environments, there are no firm data. At FARMA and VET, potential supervisors submitted projects, of which a number were selected on a competitive basis. These were then advertised and applicants were selected on the basis of the applicants’ qualifications. In general, for persons outside of the local environment it was easier to apply for positions at FARMA and VET than for positions at SUND, and the number of international students enrolled has been substantially larger at FARMA and VET (Appendix 1). Part of this difference is related to the need for a Danish medical qualification for clinical projects. It was unclear if sufficient advantage was taken, particularly at FARMA and VET, of having an international intake. All graduate schools recognized the importance of ensuring as far as possible synergy between PhD students and their supervisors before enrolment.

Formally, the graduate schools are not responsible for PhD students’ employment conditions and salaries. Firm statistics are not available, but the panel was informed that the vast majority have the employment conditions agreed with the academic unions. In some cases, the PhD student’s appointment was in the mother country, with part of the PhD project being performed in Copenhagen (‘sandwich’ PhD).

The international PhD students interviewed indicated either that they had found the graduate school on the internet or that they had applied through personal contact, in some cases through having obtained a research studentship. For those applying from outside of Denmark, offers of PhD positions had usually involved an interview (Skype or telephone). In one case, the final degree would be a joint degree.

**Recommendations for the new SUND**

3.1 Efforts should be continued to ensure that well-qualified applicants outside of the local environment have a real possibility of being enrolled as PhD students.

3.2 It is recommended that the projects on which applications for enrolment are based should not in general require prior approval from the Graduate School (as has been the case at FARMA and VET). It is recognized that in some cases, strategic considerations require that stipends have to be allocated to specific areas. In all cases, the panel recommends that the present procedure of SUND is followed, where applications for enrolment must provide a full project protocol and this protocol should be approved by the Graduate School. (NB. At present, protocol approval is performed by the Faculty Research Strategy Committee (*Danish, Fakultets Forskningsstrategiske Udvalg, FFU*), but as indicated below it is recommended that this function can be taken over by the graduate programmes (recommendation 8.3.1)).

3.3 It should be ensured that PhD students contribute to the development of project protocols, and present their own ideas in the research plans.
3.4 More advantage should be taken of the efforts made to have international PhD students. E.g. greater efforts to help particularly successful students obtain postdoc positions after completing their PhD programmes; the establishment of collaborative arrangements with the home institutions of international PhD students. More joint/dual degrees would support the establishment of such arrangements.

3.5 Technical support for enrolled international PhD students should be improved. In particular support should be provided to help these students find accommodation, and also with other bureaucratic tasks.

4. PhD training programme

At all the former graduate schools, the PhD training programmes were based on original hands-on research. All graduate schools had (at least by 2011) compulsory courses (with examination) in scientific ethics.

According to national regulations, the PhD programmes are nominally restricted to three years. However, in all three former graduate schools dispensation for extension was given following a motivated application. Average time from enrolment to submission was about 3.5 years at FARMA and VET, and 3.2 years at SUND (Appendix 1). These data provide net times, and take account of the fact that a substantial number of PhD students have periods of leave of absence (e.g. parental leave). The data also show that only about 70% complete their degree within the standard 3-year time limit. From the statistics provided, dropout rates appear to be less than 10%, perhaps even less, but firm data are not available. Thus most PhD students do complete but take longer than indicated in the national PhD regulations.

According to national regulations, all the former graduate schools required PhD students to complete course work totalling 30 ECTS. Up to 10 ECTS was usually covered by courses in transferable skills, but this was not mandatory. Over the past 3 years, the number of courses at SUND rose from around 40 to 170. At FARMA and VET, the number of courses has been rather small. Merit was given for courses taken elsewhere. The panel noted that one of the courses held by SUND was a statistics course (taken by almost all PhD students) that gave 13 ECTS, which was almost half the total course requirement. The panel considered that the size of this statistics course was greater than would be needed for most PhD students. The panel has asked to see course evaluations, and those that were seen were satisfactory. The total number of courses being offered by new SUND is about 200. This seems a high number, but courses will only be held if there is sufficient registration.

At FARMA and VET, there appears to be a strong tradition for PhD students spending time abroad, with about half taking up this option. At SUND, the numbers appear to be proportionally less, although reliable statistics about this are lacking.

PhD student counselling has been performed by “PhD coordinators”, who are academics at the institutes concerned. While the advice given could be appropriate as regards technical issues, the panel found that students were unaware of the opportunity or reluctant to consult PhD coordinators over supervisory issues and personal problems. Information supplied to the panel indicated that the PhD coordinators were in any case rarely consulted and that not all PhD coordinators appeared to be aware of their responsibilities. A pilot project allowing students with personal difficulties to receive coaching by an external professional has been positively received by students. PhD students have had the possibility of appealing to the Head of the Graduate School or the Rector if they had serious complaints. A “specially designated person” (an academic) has also been recently appointed who can be consulted.
There is wide variation in the amount of teaching that has been expected. For PhD students based on some clinical departments there has been no teaching, but at some SUND biomedical institutions and at VET PhD students may have been asked to do up to six months of teaching (as indeed may have been required to in accordance with an agreement between the Ministry of Research and the academic unions). The panel found this quite unrealistic if the PhD thesis is to be at an international level and completed in three years.

The PhD students have contributed to the management of the graduate schools through the PhD Committees, where PhD students have a certain number of seats. There are no PhD Student Associations, which could provide informal PhD student participation in the development of PhD programmes.

**Recommendations for the new SUND**

4.1 The panel recommends the introduction of a shorter course in statistics. In particular, there is a need for a statistics course directed towards biosciences. The longer course could be retained if there is a demand for it.

4.2 More encouragement should be given, especially within former SUND, to ensure that PhD students spend some time in an institution abroad. In particular, the guidelines for students going abroad should be more widely disseminated. A possible incentive would be for planned time abroad (with documented acceptance from the host institution) to be a competitive element in the award of PhD stipends. In all events, planned time abroad should be indicated when applying for enrolment. A checklist for practical things to be done when planning time abroad would be useful.

4.3 A better form for PhD student counselling should be introduced to allow informal discussion of personal problems, including problems concerned with supervision. A PhD student counsellor should be appointed to act independent of the Faculty and the leadership of the Graduate School to ensure complete confidentiality. The counsellor would be expected to contact supervisors if deemed necessary. Supervisors should also be able to consult the counsellor in cases of supervision difficulties. NB: There was full support for this concept from all stakeholders interviewed. Where conflicts cannot be resolved by the counsellor, then the matter should be referred to the Head of the Graduate School or the newly appointed "specially designated person".

4.4 The responsibility of dealing with the more technical aspects of PhD student counselling should be transferred to the managers of the graduate programmes. Thus the panel recommends that the present PhD-coordinator function be abandoned.

4.5 The teaching requirements expected of PhD students should be compatible with being able to perform the other aspects of the PhD programme. The requirements should be similar for all PhD students. All PhD students should do some form of teaching with a recommended maximum of 200 hours including preparation over the whole PhD programme.

4.6 Support should be given for arrangements that allow PhD students to meet informally. It is also recommended that efforts be made to establish PhD student associations.

4.7 The panel has noted that about 30% of PhD students exceed the standard 3-year time limit from enrolment to submission of thesis. This corresponds with international experience. Therefore, while the panel recognizes that national regulations stipulate the 3-year time limit, the panel believes the limit needs to be interpreted flexibly, if the PhD thesis is to be at international level. The panel recognizes that this has financial implications regarding salary support for PhD students after completion of the standard 3-year time limit.
5. Supervision
At all three former graduate schools, most PhD students have had both a main supervisor and one or more co-supervisors. None of the graduate schools have had any limitation on the number of PhD students that a supervisor can have. Main supervisors have had to be at the level of Professor or Associate Professor, or equivalent. There appear to have been no formal criteria for ensuring that the supervisor has sufficient current research activity and networks. The duties of supervisors and PhD students in the supervision process have been stated briefly on SUND’s website, but do not appear to have been widely disseminated.

At FARMA almost all supervisors had participated in a supervision course. At VET and SUND very few supervisors had attended supervision courses, and the courses provided were mostly courses in university pedagogy and not tailored to PhD supervision in biosciences. An exception is the BRIC graduate programme, where in a pilot study supervisor courses have been held. In the new SUND it is recognized that there is a need to improve and formalize training for PhD supervisors, and the new Graduate School wishes to develop a course which is mandatory for all new supervisors. All other supervisors will be offered the opportunity to attend the course as well. An important part of this course will be research ethics and responsible conduct of research as an integral part of PhD supervision.

The student questionnaire (appendix 2) indicated that 70% were satisfied or very satisfied with the supervision process, the remainder being neutral (23%) or dissatisfied (7%). There was general agreement among all interviewees that supervisor courses would be helpful in increasing the proportion of satisfied students – but also in improving the supervision process for all students and supervisors for mutual benefit.

Recommendations for the new SUND
5.1 All PhD students should have a main supervisor and a co-supervisor. In special cases, the panel recommends that there may also be one additional co-supervisor. All supervisors should be Professors, Associate Professors or equivalent.
5.2 The number of PhD students per supervisor should be compatible with the supervisor’s workload.
5.3 Contracts concerning supervision should be part of the enrolment process covering the duties of the supervisor and the duties of the PhD student in the supervision process.
5.4 Approval of applications for enrolment should take into account the research environment provided by the supervisory team.
5.5 The panel agrees that the Graduate School should provide training for all supervisors. In order to accommodate the needs of more experienced faculty members, it is suggested that different types of supervision training could be considered. For example, workshops in supervision best practice, with participation of senior and junior supervisors and students could be held. Such workshops could be based on case studies.

6. PhD thesis
As indicated in section 2 above, the panel has examined a random selection of theses, corresponding to 10% of theses submitted in 2011. The theses were all based on a literature review and overview and critique of the project results (averaging 65 pages in length) together with on average 3.4 papers (articles or manuscripts). The PhD student was first author of 80% of the papers, and 60% of the papers had been published or accepted. All theses were written in English.
The panel understands that this format is now used by almost all PhD students, and that the monograph format is hardly ever used.

In the sample examined, the journals in which the articles were published were in general not particularly high-ranking, but it was recognized that from a training point of view, PhD students are likely to have made greater contributions to the writing of articles in lower ranking journals.

The panel found that the general standard of PhD theses from all three former graduate schools was comparable to international levels, particularly taking into account that the length of a Danish PhD programme is only three years and includes other commitments such as 30 ECTS course work. There is also the possibility of being required to do up to six months of teaching but, as indicated in section 4, the panel found such a teaching load to be quite unrealistic if the PhD thesis is to be at international level (see recommendation 4.5).

Recommendation for the new SUND

6.1 The Graduate School should continue to expect PhD theses to be equivalent to around three first-authored publications in respected international journals. (NB: This target was also supported by the students interviewed).

7. Assessment

In accordance with national regulations, acceptance of a PhD thesis includes acceptance of both the written thesis and a subsequent oral defence. In addition, in accordance with national regulations, the assessment committee normally has an international member, and the supervisor is not a member of the assessment committee.

Where the written thesis is not found to be acceptable, this is returned for revision. In principle, the written thesis can be rejected without possibility for revision, but this does not happen in practice. There appear to be no procedures for a negative assessment of an oral defence, and the panel understands that no such negative assessments have occurred at any of the former graduate schools in the past five years. All members of the assessment committee are required to be physically present at the oral defence.

No distinction is made between the PhD requirements for PhD students with a medical or other degree.

Recommendations for the new SUND

7.1 Procedures should be established for revision of the thesis in response to comments from the assessment committee. Following revisions, the committee should have the opportunity to review the revised version and approve it for oral defence only if it meets stringent scientific criteria.

7.2 There should be procedures outlining the consequences when the candidate fails the oral defence. For example that there should be the possibility of a second defence.

7.3 The possibility of allowing international members of the assessment committee to perform their examination at a distance using modern information technologies should be explored. This could allow reduction of expenses, and increase the quality.
8. Structure

8.1. Administration of the new Graduate School
The administration will be responsible for budgeting, controlling and supporting the management of “globalization” funds, which for the Faculty of Medical and Health Sciences will be ca. DKK 225 mio. in 2013. National criteria for measuring the Faculty’s performance include the number of new PhD students enrolled, and PhD theses successfully defended. The goal is 412 new PhD students per year (compare the goal for Denmark: 2900 new enrolments per year). The funds will be used to provide PhD stipends.

The administrative tasks will also include scholarship payments, ensuring the administrative processes for the twice yearly grant-application rounds and handling individual strategic grant allocation, handling enrolment, leaves of absences, extensions, applications for stays abroad, changes of supervisors, checking progress reports; changes in PhD plans, assessment committees, production of diplomas, collecting and controlling tuition fees, administrative support for graduate programmes, etc. The administration is also responsible for the announcement, administration and evaluation of courses. The administration has a staff of 19 persons (full-time equivalents) plus two in the finance department.

As for the former graduate schools, the expenses of the new SUND will be financed via tuition fees. Each PhD student will (as formerly) be charged DKK 40,000 p.a. The tuition fee covers the cost of courses, support for the graduate programmes, supervision and assessment, evaluation of the programme, support for time abroad, and activities such as the annual PhD Day. The tuition fee also covers the cost of the Graduate School administration. The tuition fee does not cover project expenses.

The panel recognized that the administration of new SUND is well-organized, but also had the impression that the administrative staff were under considerable pressure. The PhD questionnaire (Appendix 2) indicated an extremely positive assessment of the administration, in that most (75%) students were satisfied or very satisfied with the administration. Furthermore, the administration interviewees reported fewer calls now than previously. However, from the students/supervisors that we interviewed we received the impression that it was difficult to get in contact with the administration, and that there was considerable delay in responding to e-mail requests (“months”).

Recommendations for the new SUND

8.1.1 The possibility for face-to-face contact between administration and students/supervisors should be increased. A “front-office” should be established where people can come and discuss their questions. It would also be advantageous if personnel from the administration on occasions visited the graduate programme sites.

8.1.2 Efforts should be made to “simplify the rules”.

8.1.3 The panel hopes that the highly relevant information in the student questionnaire (appendix 2) is shared with all relevant stakeholders and fully used towards quality management measures.

8.2 Information technology
The new SUND is aiming to support graduate education across 13 departments (on 7 different sites) and 26 graduate programmes offering over 200 courses, and keeping an ECTS accounting system. The Graduate School will provide support for spending time abroad and helping foreign students. There will be over 400 enrolments per year, a similar number of defences, and a total of over 1500 PhD students. Currently the administration has to use several stand-alone IT programmes, none of which appear to be satisfactory.
The panel was impressed by the fact that despite these shortcomings, the administration has over the past year been able to administer the large volume of work, largely due to imaginative use of existing technologies, and the incorporation of others that were independent of the university system. However the panel questions whether this will be possible to sustain in the long run.

The panel recognizes that the Head of administration has made repeated attempts throughout the last eighteen months to have the IT environment upgraded, but this has apparently been thwarted due to other university priorities.

Recommendation for the new SUND

8.2.1 Given the ambitions of the Graduate School, the IT infrastructure is completely inadequate (indeed “antiquated”) and not fit for purpose. The panel strongly encourages the Faculty leadership to take the measures necessary to obtain an integrated, user-friendly IT platform serving all aspects of the Graduate School administration if the Graduate School is to achieve its aspirations. Such upgrading is also needed if highly qualified personnel are to be retained in the administration.

8.3 Graduate programmes

In 2007 SUND had 24 research training programmes with varying degrees and models of organisation. Less than half of the PhD students were attached to a programme. The role of the graduate programmes has apparently not been clear to many PhD students and supervisors.

The programmes were redesigned in 2010 in collaboration with department heads and senior researchers, and in January the following year 18 new graduate programmes were established. All PhD students had to be affiliated with a graduate programme upon enrolment. The prime roles of the graduate programmes was to provide courses (of which up to 10 ECTS could be mandatory) and a summer school or equivalent. The managers of the graduate programme received compensation corresponding to the number of PhD students in their programme, and the graduate programmes had a budget also based on this number. The courses and summer schools were financed and to a large extent administered by the central administration according to clear criteria.

In the new SUND, all currently enrolled PhD students at the Graduate School of Health and Medical Sciences will be affiliated with one of 25 graduate programmes (18 from former SUND, 1 from FARMA and six from VET). The number of PhD students in each programme will be on average 60, but will vary widely from 8 to 170. The current method of financing graduate programmes will be continued in new SUND.

Recommendations for the new SUND

8.3.1 The panel recommends that the responsibilities of graduate programmes should be substantially increased from just holding courses and summer schools to include e.g. a role in admission procedures, monitoring of project progress, enhancing supervision practices, career development, and approval of thesis assessment committees. The programmes should also seek to provide a scientific environment for their PhD students, to provide student counselling regarding practical issues, and to network with other research programmes. It is recommended that the managers of the graduate programmes form a committee under the chairmanship of the Head of the Graduate School (Graduate Programme Committee). This committee could become effectively the “executive” of the Graduate School.
8.3.2 The panel recognizes that this increase in responsibilities would place extra burdens on the managers of the graduate programmes, and they would need administrative assistance. Since this recommendation concerns a decentralization of responsibilities of the Graduate School, and not an increase in the total number of responsibilities, it should not be necessary to increase the total administration. Thus, some form of reorganization of the central administration might be sufficient if complemented by additional administrative support from the department where the graduate programme manager is based.

8.3.3 Arrangements should be made to ensure that the status of graduate programme managers is consistent with the requirement that they will be part of the line management of the Graduate School.

8.3.4 The panel recommends that the number of PhD students in each programme should be made more equal. The panel thus recommends that there should be a total of 12-16 graduate programmes, each with a minimum of 50 PhD students and a maximum of about 125.

8.3.5 The recommendation that the graduate programmes should in future be responsible for enrolment implies that the role of the Faculty Research Strategy Committee (FFU) regarding the Graduate School be confined mainly to assessment of applications for Faculty stipends.

8.3.6 Consistent with national regulations, the role of the PhD Committee should be to define policy, to make plans, to ensure quality assurance, and to approve other aspects of the PhD education such as the course programme. In the view of the panel, the details of running the graduate school should be left to the proposed Graduate Programme Committee.

The suggested organogram is shown below.

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8.4 Progress reports
At all three former graduate schools, progress of PhD programmes has been monitored through half-yearly reports. However, the reports that the panel has seen are perfunctory, and can hardly be used as an instrument for quality assurance and enhancement. This sentiment is also unambiguously shared by the PhD students, as documented by the PhD student questionnaire (Appendix 2). The Head of new SUND has
thus proposed setting up a thesis committee around each PhD student and his/her supervisor to monitor progress of projects.

Recommendations for the new SUND

8.4.1 The panel strongly supports the plans to introduce a “thesis committee”. It is recommended that the thesis committee should consist of one or more persons (optimally two) external to the supervisor team. The committee should meet with the PhD student and the supervisors two or three times during the PhD programme for a full presentation and discussion of the progress of the project and how it can be developed. These meetings should replace the present half-year reports.

8.4.2 The meetings should also provide the Graduate School with information about the progress of the project in a written brief report of standard format signed by all parties. Where necessary the reports can be used to initiate measures to get projects “back on track”. It is noted that these periodic meetings would also be an opportunity for systematic feedback on the quality of supervision and of the research environment so that measures to enhance these can be taken if necessary.

The fusion process

As regards the fusion process, the panel is aware that the very different sizes and traditions of the three former graduate schools give challenges for creating the new Graduate School, new SUND. Each of the former graduate schools had their strengths and weaknesses and it is important to ensure that the strengths of each are utilised in the new construction, and that the advantages of size are not negated by lack of sensitivity to the requirements of the individual scientific environments. The panel is aware that the best practice aspects of all three former graduate schools are being carefully considered as to how these can be incorporated into the new SUND.

The panel understands that there are differences in the manner in which PhD stipends have been financed at the three graduate schools, with external funding playing a substantially greater role at SUND than at FARMA and VET. The panel appreciates that all parts of the new Graduate School must in time be based on substantial external financing. The panel was pleased to learn that measures are being taken to allow FARMA and VET time to adjust to the new conditions.

Conclusion

See next page.
Conclusion
The panel finds that all three previous graduate schools were well-organized and provided well rounded, balanced, tangible and very good PhD education, suitably geared towards the academic, clinical, as well as the private labour market. SUND has made remarkable progress over the past two years in being able to develop procedures to deal with its ca. 1000 PhD students and to raise quality. FARMA and VET both had experience of some best practice procedures that will be of use in the new SUND. The committee endorses the strategic goal to merge these schools to streamline procedures, to further stimulate translational, interdisciplinary interactions and to reach economy of scale. For this the panel finds it essential that the present IT system be replaced with an integrated, user-friendly IT platform serving all aspects of the Graduate School administration. With this background the panel believes that the daring and laudable initiatives being undertaken have great potential and the panel hopes that its recommendations may help in further shaping this new SUND.

Any questions concerning this report may be sent to the chairman of the panel.

On behalf of the panel.

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2 December 2012
Appendix 1

Key statistics for the former graduate schools

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<th>FARMA</th>
<th>LIFE</th>
<th>SUND</th>
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<tbody>
<tr>
<td></td>
<td>2009</td>
<td>2010</td>
<td>2011</td>
</tr>
<tr>
<td>New enrolments</td>
<td>40</td>
<td>65</td>
<td>42</td>
</tr>
<tr>
<td>Total number of enrolled PhD students at year end</td>
<td>128</td>
<td>163</td>
<td>168</td>
</tr>
<tr>
<td>Number of PhD degrees awarded</td>
<td>30</td>
<td>24</td>
<td>31</td>
</tr>
<tr>
<td>Average duration of PhD study</td>
<td>3.6</td>
<td>4.1</td>
<td>3.47</td>
</tr>
<tr>
<td>Stay abroad during PhD training</td>
<td>55%</td>
<td>55%</td>
<td>39%</td>
</tr>
<tr>
<td>Approximate percentage completing within standard time limit (granted extensions, leaves of absence, etc. excluded)</td>
<td>78%</td>
<td>54%</td>
<td>77%</td>
</tr>
<tr>
<td>% female PhD students</td>
<td>60%</td>
<td>59%</td>
<td>50%</td>
</tr>
<tr>
<td>Average age at enrolment</td>
<td>27.5</td>
<td>27.1</td>
<td>27.8</td>
</tr>
<tr>
<td>Enrolled international PhD students (% of all enrolled)</td>
<td>17%</td>
<td>34%</td>
<td>26%</td>
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</table>

The table indicates the substantial differences in the sizes of the former graduate schools. It also shows that the PhD students were about three years younger at enrolment at FARMA than for the other two graduate schools. Furthermore there were proportionally 2-3 times as many international PhD students at FARMA and VET as at SUND. Data about stay abroad during PhD training were not available for SUND (n/a), but information supplied to the panel indicated that the number of students spending time abroad in SUND was probably lower than in FARMA and VET. The length of PhD studies, the rate of completion within the standard time limit and gender distribution of PhD students were similar in all graduate schools. Data about the number of students completing their PhD studies after the standard time limit are not available, but dropout rates were believed to be extremely low (5% was mentioned) at all the former graduate schools.
Appendix 2

PhD student opinions
SUND has asked all students to fill in a questionnaire about the PhD programme when they are leaving. The following summarizes the results from the students who submitted their theses in the first half of 2012.

A questionnaire was sent to 98 SUND students just after they had handed in their theses. There was a 75% response rate. In general, 70-80% appeared satisfied or very satisfied, but a group of around 20% were not. Key findings were:

- Only half students participated in development of their project.
- There was a low assessment of half-year reports.
- Two-thirds of students were satisfied or very satisfied with PhD supervision process. 16% had had their supervisor assigned. 16% had only one supervisor.
- 75% did not have contact with their “PhD coordinator”. Half of those who did have contact were satisfied or very satisfied.
- 70% of students were satisfied or very satisfied with the generic courses (type and contents), and also for the academic courses.
- 58% had attended courses abroad.
- 26% of students provided details about time abroad. Half of these had spent under one month and one sixth more than 6 months. Only one quarter had financing from graduate school.
- Half were satisfied or very satisfied with opportunities for international networking.
- 62% of students had had teaching experience during their PhD programme. Of these 70% had spent less than 5% of total PhD programme time on teaching activities. 2.5% of the students reported spending 20-30% of their time on teaching. Two-thirds were satisfied or very satisfied with the relevance and academic output of their teaching activities, but there was no information on the type of teaching.
- Ca. 60% of students had presented at conference congress, and/or “seminar in your scientific environment” and/or “scientific communication”.
- 97% found publishing/submitting articles important.
- 65% were affiliated with a graduate programme. About one third were satisfied with the programmes. One fifth found the affiliation important.
- Two-thirds were satisfied or very satisfied with the available IT facilities. Only 3% were dissatisfied with access to experimental facilities.
- 90% had had contact with PhD administration. Three quarters found the contact satisfactory or good.
- Comment: “Lack of full funding prior to enrolment ... forced them to spend time and energy to ensure funding”.

A similar survey conducted at LIFE in 2011 showed similar results, although the general level of satisfaction appeared somewhat higher 75-85%. In contrast to SUND, most (75%) PhD students had had contact with their PhD coordinator.