

PANEL 9 – MEDICINE | EXPERIMENTAL

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1. OVERALL ASSESSMENT

The department has about 200 staff members of which about 20 are researchers in tenured positions, 90 are researchers (including doctoral students) in temporary positions (time limited grants) and 81 are other personnel (mainly technical support personnel) many of which are also on temporary grants.

The research quality is judged as being on average very good with great variability. Large parts of the big neurophysiological division are of outstanding quality while other groups such as the divisions of immunology, vascular and airway research and cell and matrix biology have leading positions in Sweden and attract wide international attention. It is our impression that the high quality work of the neurophysiological division can probably withstand the anticipated retirement of a leading PI in the foreseeable future, but that attention must be given to maintaining the division's international reputation. In the cell and matrix biology division, retirement of the leading PI in the near future requires attention. We think there is potential in the interaction of several researchers in the Department, which have overlapping interests in matrix biology. It seems that division of immunology has young and very promising researchers and there is important potential in this division which could be exploited.

The division of cellular and molecular pharmacology might play an important role if the Faculty considers taking part in establishing education

in pharmacy in collaboration with other faculties. It seems natural that this division should be involved in pharmacy education.

The division of diabetes metabolism and endocrinology also appears to produce work of high quality in an area of substantial societal relevance. There appears to be good interaction with other groups in the faculty who study diabetes making this area an important part of the research profile of the Faculty.

The small division of developmental biology may be under the critical mass to be very productive. There seems little interaction between the two PIs and the publication rate is falling and is currently at a low level.

The department has undergone substantial changes in the type of personnel employed during the last 4 years. The number of research fellows has been reduced to about 30% and the number of doctoral students has been reduced with more than 50%. This is compensated to some extent by an increase in the number of researchers, but there is an overall substantial reduction in researchers. The reduction of doctoral students was consequent to recommendations from a previous evaluation and was motivated by the argument that postdoctoral fellows produce better research, which is a relevant argument and it is not our impression that the level is too low. On the other hand many of the postdoctoral fellows (“researchers”) may come from countries where the quality of the Ph.D. education is variable, although we have seen no statistics for this.

We see a problem in that less than 10% of the scientific personnel at the age of 38–39 years have permanent positions and that it is very difficult for a young researcher to have a credible career path with some security ahead of him/her. This is also in contrast with the stated goals of the research strategy of the Faculty. We fear that this could discourage talented young people to follow a research career and negatively influence their choice of research projects, and it may have negative consequences for the gender issues as it could be feared that this is a greater problem for young female researchers.

We think there is a problem for the flexible development of high quality research in the management structure. The HoD who is now running a large unit has apparently very limited possibility to think strategically in

that she has no control over the recruitment strategy and the economical possibilities are very limited. Apparently she is responsible for deficits but has limited access to surpluses arising during the year, although this needs confirmation. If correct this has several consequences: It limits the possibilities for the HoD who has insight into the detailed function of the unit to act appropriately, it will be difficult to hire qualified and engaged HoDs and it will be demotivating for the researchers to experience the limited possibility of the Departmental management. We appreciate that the management structure means that the formal power lies at the Faculty management or with the Vice-chancellor, but we think that it might be worth considering whether there could be some advantages in delegating some more responsibility to the HoD.

It has been somewhat difficult to be certain on the strategy adopted for the recruitment. On the one hand it was stated to us that the Faculty had “a strategy of no strategy” in their recruitment plan despite that the stated goals in the Faculty strategic plan is to develop “strategies for prioritizing areas of research and staffing”. This apparently reflects the opening of 3 lectures positions which were not in specified areas. The aim was to try to hire the best possible young investigators with the longterm goal of establishing highly successful research groups in the future. From the positions which are currently advertised at the faculty of Medicine it is clear that there is a strategy behind the way that recruitment is approached. It is difficult to find out what this recruitment means for the Department of Experimental Medical Science. We should also point out that from an internationalization point of view it is striking that the positions are apparently only advertised in Swedish.

2. RESEARCH INFRASTRUCTURE

The research infrastructure is very good with the BMC being a good platform for interaction and flexibility. There is room for improvement though. To enhance possibilities for translational research it might be worth considering whether clinicians and possibly relevant groups from other faculties (e.g. science faculty) could be physically more integrated with the preclinical researchers. In one instance we found the gangway between the clinical and preclinical units in BMC blocked! Apparently there is also a limited possibility for the researchers to meet at coffee and lunch rooms for informal interaction. With respect to complex

technological platforms there is a wish for better transgene facilities, imaging facilities, mass spectroscopy facilities etc, as long as they are not run as core facilities in the classical sense. It was suggested that they are based in and run by research groups, which should then make some of these state of the art technologies available for other groups. It is worth considering how this is best done but for some facilities e.g. transgene facilities it seems that a central facility run by a dedicated staff may be the best option. There was also an indication that the IT support could be at a higher level.

3. RESEARCH QUALITY

The division consists of seven Divisions which are based on research interests.

3.1 Cell and Matrix Biology

Summary: This is a relatively small Division, but populated by some excellent scientists. The Division as a whole has a long and distinguished history and a distinctive scientific profile. Their blueprint is the identification and characterization of many proteoglycans and other types of multifunctional molecules, the investigation of the complex architecture of the extracellular matrix, and bridging basic research to relevant disorders. Their contributions are internationally well recognized and the Division can be counted among the leading matrix biology setups in Europe. Another line is represented by work on binding of *Helicobacter pylori* to mucins. The effort in Matrix Biology seems to far outweigh the “Cell Biology” component – perhaps the name of this Division is not an accurate reflection of activity.

Quality: On average *excellent*, though varies *between very good and outstanding*. Many publications appear in highly regarded international journals, and are cited often. It should be noted perhaps that not all the chosen publications are in the first rank of journals, but this partly reflects the specialized nature of some of the research. The high quality research is backed up by significant extramural funding, although again this is variable between investigators. The average support is less than that of some other groups in the Department, but it is also probably the case that not all investigators are full time in Lund.

Productivity: The group consistently publishes and has kept up a very good rate of publication over many years. On average *very good*.

Relevance: This is *excellent to outstanding*. Diseases of relevance to man are studied, ranging from arthritis, atherosclerosis, reproductive biology and muscular dystrophy. Important contributions have been made to all of these areas, though inevitably, with the small division size, this means that each disease area receives attention from only one group.

Vitality and Organisational Capacity: *Good* – but an area of concern. Several investigators will retire in the next few years, but a younger generation of PIs, with very good track records, is also present. Nevertheless, without replacement, the Division would be badly compromised. Future plans depend on the recruitment strategy and the focus of the research. As a future direction “cellular biomechanics” is targeted in the document. This presumably builds on much of the current work in the area of musculoskeletal extracellular matrix, and is a logical target. However, connections with biomechanics, tissue engineering and related disciplines are not apparent, and could be very important for the future. Moreover, investigators in other Divisions, such as Developmental Biology and Vascular/Airway research clearly have expertise related to that in Cell and Matrix Biology, but there seems little collaboration. Altogether, the scope of the research and strategies for embracing the changes that the Division is facing should receive strong attention. Reducing fragmentation and ensuring critical mass and synergies is essential. The strong medical relevance and scientific profile should provide a fruitful basis for such planning as well as the excellent international network of the Division.

3.2 Cellular and Molecular Pharmacology

Summary: This is a relatively small division that includes sections in Drug Target Discovery, Biogenic Amines, Biomedical Polymer Technology and Genomics and Bioinformatics. The major concentration of support is within the Biomedical polymer section. Overall the publication record of the leaders of the sections is good, but it appears that the productivity is restricted to these individuals. This is also the case with the Genomics and Bioinformatics section in which the publications are limited to manuscripts from Dr. Medstrand. It isn't clear whether the services and resources of this section are utilized by investigators in other Divisions, or whether comparable resources and facilities exist elsewhere

within the institution. There was no possibility to explore this further at the site visit.

Quality: Overall the quality of the research is judged to be *good*. Importantly, several of the publications have direct translational relevance. The manuscripts are largely restricted to specialty journals and there are only a limited number of publications that are published in higher impact and general scientific journals.

Productivity: The productivity is judged to be *good*. Many of the manuscripts are in press and past publication records are good. It isn't clear whether there are relations or collaborations with pharmaceutical partners. This should be encouraged since several of the projects and publications would appear to have clinical application and relevance.

Relevance: The focus of the research projects as exemplified in the publications is relevant to the specialty interests of the sections. Likely, because of the small number of research faculty, the work is of relatively limited scope, although as described above, several of the projects have clinical translational relevance.

Vitality and Organisational Capacity: Because of the limited number of personnel and relatively conservative budget, it is difficult to judge the overall vitality. The leaders of the sections are the major authors on essentially all of the publications and it would be useful to know whether there are plans for expansion of the individual programs. Also, it isn't clear whether there is interaction and collaboration between the sections. This is particularly the case with the Genomics and Informatics section that in many research organizations serves as a general resource for the research community. Also, it would be useful to know whether there are ties to graduate programs outside the division and to have more information concerning the graduate and post-graduate training and education activities of the division.

3.3 Diabetes, Metabolism and Endocrinology

Summary: The scientists in this Division produce work of excellent quality, and the work is internationally well recognized. The questions addressed in this area are central for our understanding of the pathophysiology of the epidemic of obesity and diabetes and are therefore extraor-

dinary relevant for the society. There appears to be a fruitful interaction with other groups in the faculty interested in diabetes and it is stated that it is intended to enhance this interaction further with the aim to optimize possibilities for translational research.

Quality: On average very *good* to *excellent*. Many publications appear in highly regarded international journals, and all PIs have high citation rates. The high quality research is backed up by reasonable extramural funding, to almost all PIs in the group. The average support is less than that of some other groups in the Department.

Productivity: The group consistently publishes papers of high quality and impact and has kept up a good rate of publication over many years.

Relevance: This is *excellent* to *outstanding*. Obesity and diabetes are currently very important diseases in the society and it is very relevant that this area has attention. The areas studied by the groups are central for our understanding of the pathophysiology of these conditions.

Vitality and Organisational Capacity: Judged as *good*. All PIs appear to have vital programs with good publication rates. There are indications that interaction with our groups interested in diabetes are strong and that it is actively considered to enhance this interaction, which will provide an excellent platform for synergism and translational research. The age distribution suggests that the unit will remain viable although retirements in the near future must require attention. The division has a very high percentage of female researchers. It might have been interesting to penetrate into the background for this.

3.4 Vascular and Airway Research

Airways

Summary: Airway Research is conducted and led by PIs, one of whom is also Head of Department (HoD) of Experimental Medicine Science. Both PIs have researcher status. The generated budget between them is 54.3% of their particular division. The overall divisional research strategy is translational and focuses on mechanistic aspects of tissue remodelling and repair processes. As such there are potential trends that could link into other Divisions. For example, the Immunology Division, specifically the grouping of Stem Cell Ageing which is likely to have aspects of

research that could be exploited in determining differentiation and fate of fibrocytes and other immune effector cells. It is difficult to ascertain what interactions exist between these 2 groups or whether there are plans in place to address a more global approach to Regenerative Medicine and Tissue Engineering. This move would create critical mass, bringing together relatively young scientists who have already made a mark in their own niche whether locally or whilst in other Institutions; and collectively have the potential to produce and establish outstanding international acclaim in this fast advancing discipline at Lund in the future. The two PIs appear to have individual research focus with good international collaborations with peer scientists and industry.

Quality: At the moment the overall impression in terms of international comparability and innovation is *very good*, but with strong potential *towards very good to excellent*, as each PI's portfolio matures. To achieve this, there is a need for them to show a more uniformed research strategy towards lung disease in their programme. Specifically, they need to show a more coherent approach in their research programme of tissue remodelling and repair; both would mutually benefit from creating valuable interactions with other groups within their University milieu in the immediate future. Strictly speaking, the research particularly that of GWT is not just limited to the airway as is seen by some of the publications; there is evidence of an interest in lung fibrogenesis and associated interstitial lung diseases; hence the group's name is a misnomer. It is advised that perhaps name of Division is changed to encompass actual research activity and direction. Furthermore, in view of the obvious interest in fibrogenesis, there is a potential in strong links with the vascular group and the Cell & Matrix Biology Division.

Productivity: Overall *good*. In terms of the budget allocation (54.3% of their division and as a Division are the 2nd highest income generators in the Department, though comparatively smaller by a long margin from Neuroscience), one would have expected more and better publications and wider data dissemination e.g. the majority of publications are in respiratory journals; which whilst being excellent in the field, should be balanced with top flight translational research journals with a broader audience. From the recently circulated paperwork, there was a nil return from one of the PIs. However on accessing PubMed there is the promise of some good recent publications but not yet reaching excellent status. A higher return might have been expected, but this should be seen in

relation to one of the PIs being HoD which might impact on productivity, particularly as some excellent publications were made 4–5 years ago. Furthermore, judging by the recent papers, it would appear that the research may have suffered a lapse in focus. A possible factor in the paucity of apparent publications could also be the commercial interaction, which may bind emerging data in IP and patent filings etc.

Relevance: In terms of relevance to lung disease and associated morbidity and mortality of chronic airways diseases and pulmonary fibrosis, the research focus on tissue remodelling and repair is very important and opportune. Despite this one would judge the status of the PIs at the moment to be *good to very good* as there is no objective evidence that their recent research data has made a significant impact within the international science and clinical community. In addition, whilst their resume suggests that their research opens avenues for potential targets, there are no research publications to date showing attempts at therapeutic modulation of key molecules or regulatory pathways to stop/reverse tissue remodelling. There is much room for critical improvement to lift their research programme to a future excellent status; the potential is clearly there but this requires a targeted strategy and stronger interaction between the 2 PIs and with other groups in the first instance.

Vitality and Organisational Capacity: In view of the comments already made, this is judged at the moment to be *good* but with a potential to achieve at least excellent status in future. This is a major area of concern as it also appears that lung research is directed by just 2 PIs with researcher status, whom are not 100% permanently employed, yet they appear to have relatively significant income generation.

Vascular

Summary: The research is conducted by 4 researchers (two of which have professor status and two have researcher status) with PI status. Three of them make vascular (smooth muscle and endothelial cell) physiology and one makes vascular wall biology as it relates to atherosclerosis. Between them they generate about half of the divisions grant money and the division. There are strong interactions between the three researchers making vascular physiology but there appears to be little interaction between this group and the PI which makes vascular wall biology. There is a recent focus on the role of the extracellular matrix for modeling of the vascular wall and it would be of interest to know whether there is interaction

with the other groups in the Department which are also interested in extracellular matrix biology although it may not necessarily be a fruitful interaction.

Quality: The quality of the research is *very good to excellent* in comparison with other groups in the same area, although there is quite some variability between the individuals with respect to the quality of the output. There are publications in the best vascular journals although no publications in the top general journals have been produced. Since the grant money for the three researchers making vascular physiology is pooled it is difficult to assess the ability of the individuals to generate money. It would be relevant to obtain more information on the research educational activity in the unit e.g. how many doctoral students are part of the group.

Productivity: In terms of productivity all four PIs are publishing although for one of the PIs the publications are in journals of limited impact.

Relevance: Vascular diseases is a major burden for society in terms of morbidity and socioeconomical impact. The general theme of the group is therefore of substantial importance. It is difficult from the “description of future promising research areas” to see in which direction the group is orienting themselves and which type of interaction they foresee.

Vitality and Organizational Capacity: It is now time to consider under which conditions the vascular group should continue given that the senior PI is 63 years. It is important to ensure stable conditions for the young and productive members of the group and also to consider whether the PI doing vessel wall biology has the critical mass to perform at an optimal level or whether conditions for her could be improved. It is relevant that a productive PI and his group moved one year ago. It should be considered whether it is important to replace him.

3.5 Immunology

Summary: The Division of Immunology appears to be a relatively moderately sized grouping with the third largest collective budget within the Department of Experimental Medical Science. The overall research focus is on immune response regulation and relationship to disease pathogenesis, which according to Form 2 is described as being in autoim-

immune/inflammatory diseases (MS, SLE and RA) and cancer. However recent publications appear to relate to the gut, haematopoietic progenitor cell differentiation and like studies; there are no apparent translational or clinical papers in these disease areas. It was not possible to penetrate more into this at the site visit. There are 6 PIs listed, with the majority of income support for 1 of the professors (WA) and a recently appointed researcher; it is clear that these 2 comparatively young PIs are raising stars to an excellent international level with first class research. Recent changes appear to have been introduced in this Division, with a creation of the Centre for Immune Regulation under FI as PI. It is difficult to determine why this separate group has been formed and the motivation behind this step, but it appears to be related to the importance of young researchers to create their own groups to be competitive for the few permanent positions. One of the difficulties to gauge is how this Division inter-links with other relevant areas within the Department or are they isolated? For example, the group of Stem cell Ageing is extremely important; but it would also fit in well with other areas such as for example Vascular and Airway Research and possibly aspects of Cell and Matrix Biology. It may prove more opportune for the Department to strategically focus efforts on forming a critical mass interest in Regenerative Medicine, Cellular Engineering and Matrix biology. Despite this, some of the PIs have established some excellent collaborations with external premier Institutions; there appear to be circulated publications for Reproductive Immunology, but it is not possible to see where it's PI fits in or the budget and how this research activity fits in with the rest of the Division.

Quality: *Very good to excellent*; indeed some areas may even be considered to be Outstanding with data dissemination in highly acclaimed top-of-the-league international journals; although it needs to be pointed out that publications for Stem Cell Ageing appear to be ones possibly masterminded from Stanford University, and indeed the work may not have been performed in Lund.

Productivity: Sadly this varies from *poor to excellent* across the PIs. First class activity in Mucosal Immunology, clearly reflecting the international status and niche expertise of the PI. This contrasts markedly with the poor return of Immune Regulation, which does not appear to have any papers for past 2–3 years, yet has been singled out as a separate Centre. Again it is difficult to know whether the returns for the Stem Cell Ageing PI have been performed in Lund or in another Institution.

Relevance: *Good to very good.* Albeit that recent years have seen a huge growth in –omics and molecular biology research, immune effector cell interactions and regulation remain a hugely important area relevant to disease pathogenesis, opening up new avenues for therapeutic targeting. However, as stated above, the translational aspects of the current research programme are not immediately visible. Mucosal Immunity could also link into certain aspects of lung cell biology. There is a huge future opportunity with the Stem Cell Aging group, but it is vital that links are made to other divisions with like interests.

Vitality and Organisational Capacity: *Very good* in terms of some bright young PIs with strong budgets giving this Division a good prognosis for the future; but as outlined in the summary above there are outstanding questions to answer in terms of overall structure and how this translates to the individual PIs and as a whole. This makes it difficult to truly evaluate their ability to manage project activity within this particular division.

3.6 Neuroscience

Summary: In summary, this is an *excellent* unit with two foci of interest in neurophysiology of sensory motor systems and neurodegenerative disorders. Given the relatively-small size of the unit, the strategy to focus research on these topics seems appropriate. Our judgment of excellence in neuroscience is based on outstanding publications of some of the PIs and on plentiful funding from competitive grants. Still, attention should be paid to recruitment of new, young PIs who will be able to build strong, independent research programs with international impact and independent funding, and whose programs would bridge between the two existing foci of neurophysiology and analysis of neurodegenerative disorders.

Quality: The Neuroscience Unit at Lund University is of *excellent* quality. It is composed of two centres of excellence with high quality levels. The Neurofortis and Bagadilico Consortia are of *outstanding* quality and composed in part of world leader in the field of neurodegenerative disorders. The results obtained in term of modelling neurodegenerative disorders, understanding the pathophysiology and developing new neurorestorative strategies is of utmost quality. The second Centre of Excellence composing the neuroscience unit is the Neuronano Research Centre which

conducts neurophysiological research and is involved in development of small size new tools for neurophysiology. This subgroup produces very high-quality, internationally-recognized research in the areas of spinal cord function and cerebellar function and learning, but is somewhat uneven in terms of the accomplishments of different members. Several of the Neuronano investigators have excellent international reputations that are deserved, while a number seem to be lagging in terms of international recognition. The methodological developments of Neuronano are of high quality and should be used more widely especially by the other Centre of Excellence in the Neuroscience Unit.

Productivity: The productivity of the Neuroscience Unit taken as a whole is *excellent* in term of both quality and quantity. Yet, the overall analysis masks the fact that some PIs have an outstanding productivity whereas others have only a very good or good productivity. This distinction is not a matter of age of the PIs as both young and more aged PIs have an outstanding productivity. It is rather a matter of individual accomplishments of the researcher. In particular, the productivity of the Neuronano Research Centre is very uneven and the group's publication stream is dominated by a small fraction of the investigators.

Relevance: The research topic developed by the Neuroscience Unit is highly relevant in term of clinical, social and socio-economic aspects. Indeed, it deals with a major issue of our industrialize countries namely neurodegenerative disorders. The unit tries to better understand the pathophysiology of neurodegenerative disorders including Parkinson's and Huntington's disease and to develop therapeutic strategies for neurorestoration. Such strategies are directly tested by some of the applicants and have provided new therapeutical strategies. The Neuronano unit concerns itself with the relationship between cellular/molecular mechanisms and behavioural function and is therefore highly relevant to developing an understanding of the relationship between molecular-based neurological disease and the symptoms of disease. Furthermore, in term of methodological development, the study of new types of implantable arrays of ultrathin electrodes telemetrically connected for electrophysiological analysis is potentially of high impact. Thus, the Neuroscience Unit as a whole must be strongly supported by Lund University both in term of new positions and funding.

Vitality and organisational capacity: The vitality of the Department of Neuroscience is of *excellent* quality as attested by the fact that this department has been able to attract young neuroscientists from other countries as PIs in the centres of excellence. One troublesome point is that only half of the investigators in Neuronano seem to have grant support, raising questions about the true independence of some of the scientists listed as members. Further, some of the PIs will retire during the next ten years and it is of utmost importance that their position is retained within the department. This represents a unique opportunity to reorganize and strengthen the department. In particular, the interaction between the two Centres of Excellence is not obvious and the new recruitments should bridge the gap between methodological development and electrophysiological studies on one hand and the study of neurodegenerative disorders on the other hand. In particular, the Unit of Neuroscience may benefit from the integration of groups involved in the pathophysiology of neurodegenerative disorders and those capable of physiological and electrophysiological studies. There also may be some synergies in development of interactions with quantitative disciplines such as physics or computer science and with more traditional psychology, all of which recently have begun to interact seriously with basic and translational neuroscience research in other countries.

3.7 Developmental Biology

Summary: This is a very small Division, with just two PIs. Both use *Drosophila* as a model for examining development, extracellular matrix and regulation of the cytoskeleton with relevance to cell polarity. The output used to be good but has dropped over recent years. The publications are routinely in internationally recognized peer-reviewed journals. The group has external funding, though perhaps less on average than others in the Department. The major concerns are whether the group has critical mass. It is difficult to see connections with related science in other Divisions and interaction. Clearly this area would require considerable internal funding if Developmental Biology is to be expanded.

Quality: The groups have published in high quality journals, and have an international reputation for their work. Extramural funding is current, although at a level below the mean for other Divisions in the Department.

Productivity: There has been a declining level of publication in the recent past.

Relevance: *Very good.* It has been shown many times that research into model systems, including invertebrate, can have impact on understanding the molecular regulation of development and disease in the human. Therefore, while indirect, this research can be relevant to human health.

Vitality and Organisational Capacity: *Poor.* There is concern that this Division does not enjoy a critical mass for optimal progress. While there is some scientific overlap with work in the Divisions of Cell and Matrix Biology, and Vascular/Airway, in the area of matrix biology, there seems to be little collaboration. It should be assessed whether the Divisions are geographically separate or can share core facilities with related research activities. Given that there will be retirements in related fields within the Department, this may be the opportunity to rationalise the organisation.

4. COLLABORATION

The department is very large, with around 200 members, and this has arisen through reorganisation in 2005 that included amalgamations. From discussions and publications it is clear that there is evidence of a good level of collaboration between research groups from within the Department, and across Departments although a detailed analysis of this was not possible with the time given for this evaluation. Some have included members of clinical departments, and together with a clear commitment to bring medically qualified investigators into PhD programmes, a foundation is present for future and further collaborations that include translational aspects of biomedical research. The excellent BMC in Lund therefore has the potential to be a significant focus of research that spans the basic and clinical disciplines, and could develop into a major strength of the University. This can be enhanced by clinical appointments where research interests can be housed in the BMC where collaborations with members of the Experimental Medicine Department can be fostered. This might also be enhanced by the Faculty promoting joint PhD programmes, where students have mentors drawn from clinical and preclinical departments. This type of future investment by the University, is of relatively low cost, yet may yield high returns in the form of further funding opportunities.

5. RESEARCH ACTIVITY AND TEACHING

It appears that most members of the department take part in the undergraduate and graduate teaching, which means that the teaching is research based. We have not spoken with sufficient number of researchers or received sufficient material about this issue to know to what extent the teaching is impacting in negative or positive ways on the research.

6. EVALUATION OF FUTURE PLANS

In the documentation provided, rather limited information on future plans was described. This is perhaps consistent with the documentation being provided by the Head of Department, yet policy generated at the level of the Dean. However, there is a need to continue the development of technology platforms, and this was strongly endorsed in discussions through the site visit. The published document “The Future of the Faculty of Medicine: strategic plan 2007–2011”, describes with a general plan for development, but again the section entitled “Research Strategies” emphasises collaborative, and integrative approaches, but defers prioritisation to the Faculty’s Strategic Advisory Board. A slightly different emphasis is encompassed in a second document “The Way Forward: Staff Strategy for the Faculty of Medicine 2007–2012”, where specific foci of strength are identified. Some are clearly within the remit of the Department of Experimental Medicine and include neuroscience research, immunology, musculoskeletal disorders, diabetes and stem cell research. It is then clear and appropriate that support should be provided to areas of strength. From discussions with Faculty leadership, a second strand is to support successful researchers whatever the specialty. However, the nature of support, other than infrastructure is not so clear, and it is apparent that close interaction between the faculty and the Dean and his Advisory Board must be maintained in order that promising research is fostered and supported. Here a role for the Head of Department could be strengthened.

Within the Faculty and the University, there are clear goals of increasing internationalisation. However, perhaps understandable in view of limited available funds, the approach of the Faculty of Medicine is to emphasise the recruitment of overseas postdoctoral researchers, rather than recruitment into faculty positions. Undoubtedly universities are enriched by the infusion of new blood, and the BMC provides a stimulating environment

for young researchers. Successful young international researchers can then be fostered for the future. However, to be fully maximised, the University of Lund website, and recruitment calls must be easily accessed in English in addition to Swedish.

7. FUTURE POTENTIALS AND POSSIBILITIES

Research into life sciences of the sort made in the department is in high demand currently and has substantial potential. It is the impression that there are substantial possibilities for the department to take part in this development. In particular it seems relevant that there is a good mix of senior people and young skilled scientists, which are highly competitive. The very competitive atmosphere is documented by many apparently highly qualified applicants for recent new research positions (this needs documentation). In the current financial situation (a substantial deficit) it is our view that by far the best option is to provide good opportunities for young people rather than spending big sums in an attempt to recruit top international scientist, whose recruitment may be difficult to maintain in Lund, even if successful. This view is reinforced by the limited success for the Faculty with this approach in the recent history and by the situation that the most successful group in the department is based on local talent. The success of neurophysiology has ensured an influx of very good people from abroad and thus documented the potential value of the more conservative approach. This does not mean that there should not be efforts made to recruit international scientists and to this end it is a surprise that apparently the recent call for new research positions is posted in Swedish only. There is a concern that none of the professors retiring from the department in the coming years will be replaced. This is a concern we share, because it would be damaging to the potential of the department with longlasting consequences.

8. GENDER AND EQUAL OPPORTUNITY ISSUES

The proportion of females at the research fellow level and the Ph.D. student level is about 65% which is very good – even to the extent where one should consider why males are outnumbered and whether this is important. At the senior lectures level 35% are females and at the professor level only 16% and there has been little change in these figures over

the last 4 years. It could be hoped that the figures for the senior positions will improve in the coming years with the high proportion of females at the younger level. However we fear that the barely visible career tract with doctoral status at an average age of 31 years and a permanent position only at 40–45 years of age may impact negatively on this.

We see the dramatic shift in gender balance at higher levels of seniority as related to the slow and uncertain process of advancement to independence in the system at the University of Lund. In this regard, we have two overall recommendations to correct this situation. One is that the University make it a priority to enable independence of highly qualified individuals at a young age (early 30's) and support this priority with central funding and incentives that make positions both attractive and viable. The second is that the University creates, monitors, and rewards an effort for mentoring young investigators. In many top institutions, it is now common to create a mentoring committee for a starting investigator and to mandate that this committee meet with the investigator semi-annually, going over strategy and detail, helping in the generation of requests for funding, and keeping close track of research and career progress. Given the institutional mandate for international reputation, it might be valuable to include recognized international authorities on the mentoring committee of starting investigators.