

*Evaluation of clinical, epidemiological, public health,
health-related and psychological research in Norway*

Clinical Research

*Clinical medicine, clinical
odontology, clinical pharmacology*

Panel 1

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Homepage: <http://www.forskningsradet.no/>

Print: GCS AS

First printing: 700

Oslo, January 2004

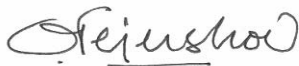
ISBN: 82-12-01902-0

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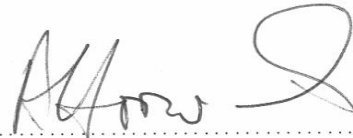
The Conclusions and recommendations in this report are based on the hearings, the supplied information and the discussions held by Panel 1. All the evaluations and recommendations have been unanimously approved. Except in one instance (Prof. Seppo Meri) no panel member has expressed any conflict of interest. As a consequence of a previous collaboration, Prof. Seppo Meri did not participate in the hearing nor in the discussions related to the Institute of Clinical Medicine and Molecular Medicine, University of Bergen.



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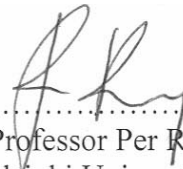
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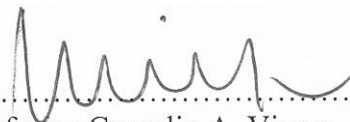
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Introduction

This document reflects a synopsis of two separate one week hearings with members of the Norwegian clinical and biomedical research community representing a number of different university environments. The comments are based upon submitted documentation as well as the oral presentations. During the sessions, we were able to ask specific questions regarding the written material. The comments should be regarded as constructive criticism and a reflective assessment of work that needs to be refined and remodelled to allow maximum utilization and development of both personal and institutional resources.

The Institutes and Departments were asked to present themselves as they wanted to be evaluated, and to provide information of available resources and scientific productivity. They were also asked to supply a strength-weakness-opportunity-threat (SWOT) analysis. This means that units which were not presented were not explicitly rated, since it is important to understand available facilities, collaborations, research strategies etc, to make a meaningful evaluation. To only use the bibliographical information supplied may lead to erroneous or unfair conclusions about the units. However, we wish to emphasize that the overall information and individual SWOT analyses have been important and supportive for the committee's general conclusions about Norwegian clinical research.

The evaluation of the individual units uses a five-grade scale;

- *weak*
- *fair*
- *good*
- *very good*
- *excellent*

These rating levels are defined as follows:

Weak: research of insufficient quality; without international interest and with only limited national significance;

Fair: research that is only partly of a good international standard and only partly published in recognized international journals.

Good: research at a good international level with publications in internationally recognized, specialised journals.

Very good: research at a high international level; of international interest with impact within its sub-fields and with publications in internationally leading journals.

Excellent: research at a very high international level; of great international interest with broad impact and with publications in international leading journals.

It is clear that the infrastructure for research differs between the different universities and that this is important for the scientific output. Table 1 provides information about the available funding and other statistics of the Norwegian faculties of medicine and dentistry.

STATISTICS

An overview of students, academic staff and funding at the relevant faculties.

Faculty	Number of Students ¹	Number of Phd graduated in 2002	Number of Postdocs	Number of Academic staff ²	Basic funding from university 2002	External funding 2002 ³
Faculty of Medicine, NTNU ⁴	580 (Medical students only)	14	25	163 (Persons employed)	214.480.000	77.643.000
Faculty of Medicine, UiO ⁵	1088 (Medical students only)	84	49,35 ⁶	192,41	399.591.000	215.264.000
Faculty of Medicine, UiB ⁷	1013 ⁸	38 ⁹	27 ¹⁰	181 ¹¹	250.000.000	100.000.000
Faculty of Medicine, UiTø	1031	17	6	131,8	172.300.000	79.000.000
Faculty of Dentistry, UiO	330 ¹²	27	6	68	140.509.000	13.148.000
Faculty of Dentistry, UiB	240	3	4	41	71.777.000	700.000
Department of Psychology, UiO ¹³	2006 ¹⁴	7	2	61	¹⁵	¹⁶
Faculty of Psychology, UiB	2565 ¹⁷	11	3	84	93.400.000	13.500.000

¹ Number of Medical/Psychological/Odontological students at the faculty

² Including Professor I, Professor II, Associate Professor

³ From industry, private and public funds

⁴ Norwegian University of Science and Technology

⁵ University of Oslo

⁶ Includes 5 candidates from Institute of Nursing Science

⁷ University of Bergen

⁸ 912 stud.med, 101stud.odont

⁹ 24 dr. med., 9 dr. philos, 1 dr. polit., 4 dr. scient.

¹⁰ 15 basic funding, 12 external fund.

¹¹ 177 basic fund., 4 extern. fund

¹² 289 Dental Students, 41 Dental Hygienist Students

¹³ Part of Faculty of Social Sciences

¹⁴ Lower degree:1586, Professional programme: 420

¹⁵ See 2001 numbers in the Factual Report, 1.4.1 Department of Psychology, UoO

¹⁶ See 2001 numbers in the Factual Report, 1.4.1 Department of Psychology, UoO

¹⁷ Professional Programme: 385 students, Lower degree students: 2015 which includes 1 year teacher training (130 students), 1 year of Children welfare programme (50 students), Work and Occupational psychology (350 students). The rest is one-year introductory courses in psychology. Higher Degree Students: Master level in Health Promotion (26 students), Master level in education/pedagogics (39 students). In cooperation with the Faculty of Medicine the Faculty is responsible for a Master programme in Health Sciences (40 students). In addition the Faculty is responsible for a basic training course in university teaching for academic staff (about 30 per year).

General conclusions and analyses

General issues

A number of indicators and analyses available to the committee clearly show that Norwegian clinical research is, in general, lagging behind other Scandinavian countries (Denmark, Finland and Sweden) as well as other developed European and American countries. This is unfortunate since Norway is a sophisticated country with excellent resources that can be devoted to the further development and amplification of a first-class biomedical community.

Statistical analyses (Nøkkeltall for medisinsk og helsefaglig forskning, 2003) also identify problems with Norwegian clinical research when compared to the other Scandinavian countries. The number of doctoral degrees in 1997 was in Sweden 19/100 000 inhabitants, in Denmark and Finland the corresponding figure was 18 while it was 14 in Norway. Furthermore, the discipline "Medicine" had the greatest relative number of doctoral degrees in all Scandinavian countries (SE - 33 %, DK - 26 %, SF - 30 %), except in Norway (21 %).

The relative number of medical students obtaining a stipend for doctoral or post-doctoral studies from the Research Council of Norway (RCN) has also decreased and was in 2001 only 29 % and 35 %, respectively. These figures should be seen with the fact that ~40 % of the clinical professors are above 60 years of age and only 6 % are below 45 years! These figures further underscore the committee's conclusion that several different strategies and programs are urgently needed to strengthen Norwegian clinical research.

Structural issues

1. Funding of clinical research and development

Virtually all research groups complained about lack of time and insufficient funding for clinical research. Although total national research funding clearly needs to be improved, there are several other structural issues that urgently need to be considered.

"Earmarked" money from the government to the regional hospitals for clinical research increased from 48.2 mill NOK 1999 to 78.1 mill NOK 2002 (Nøkkeltall, 2003) and to 96 mill NOK 2003. This is competitive money where allocation is based on grant proposals which are, and should be, evaluated together with the Medical Faculties.

However, it is clear that considerably more money is spent by the Helse regions on clinical research, but this money has not been adequately identified and exposed to competition. For instance, the Helse regions also pay for professor II, many PhD students, laboratory and other core facilities for research, many laboratory and other clinical examinations procedures and, as became apparent during the hearing, in some cases also for clinical trials with external funding, which is then used to support own research.

It is a difficult, but necessary, task to identify the money already used for clinical research. Initial attempts have been made and the estimate was 197.1 mill NOK in 1999 (Nøkkeltall, 2003). However, a well-structured program should be implemented to clarify both the amount and allocation of this funding. Following this, it should be rationally decided how the money should be distributed based on priorities established together with the Medical Faculties and

the RCN. We strongly recommend allocation in competition rather than the current support of poorly defined research activities.

A comparison can be made with similar systems established in Denmark, Finland and Sweden. Research-active physicians in the university hospitals apply for time and other resources to perform their research. To allow stability, long-term funding (3 years) is usually given. The applications are evaluated by research committees from the same or external medical faculties, and scientific productivity is monitored. An indication of the level of funding of clinical research at the University hospitals is ~3 % (-5 %) of the hospital budget. However, the level of ambition is obviously a political and executive decision.

In addition to this “earmarked” money for good clinical research, funding for “development” of the clinical services is also required. These activities should be aimed at establishing new clinical procedures, evaluating and improving existing activities, quality control etc. To raise overall awareness and improve critical thinking, money for clinical “development” should include also the regional clinical units (i.e., not just university and regional hospitals), and should incorporate the nursing sciences. The level of funding for clinical “development” is, again, a political and executive decision. Importantly, such funds should be “earmarked”, should have a regional distribution profile and should include scientifically well-trained and responsible principle investigators from the universities as mentors. With this system, clinical development becomes a natural part of every clinical working environment, not only an exclusive activity in university hospitals. This type of “grass root activity” will also promote recruitment to more complex research of the traditional academic type and raise awareness of routine clinical procedures.

The availability of “earmarked” money for clinical research (and “development”) is crucial in order to improve the situation for the clinicians in terms of necessary time and consumables for research. Such programs should be competitive and closely evaluated in terms of scientific productivity and results.

The Norwegian Radium Hospital in Oslo has worked extensively to try to identify how much is being spent on research and clinical “development” through the hospital budget. They concluded that it may be up to 9.5 %. This figure should be interpreted with some caution, given the difficulties and approximations made. However, similar numbers have been identified by other Scandinavian hospitals and can be used as a guideline for the further planning.

2. Lack of synthesis and critical mass

It was our impression that many of the research groups at individual universities and amongst the universities themselves were functioning as isolated groups with little interaction. Furthermore, even within individual research groups there were diverse goals and an overall lack of leadership necessary to synthesize diverse interests within an organizational framework. As a result, it was apparent that in many circumstances, core facilities were either absent or underutilized. Individual groups were hampered in the pursuit of their research by not having access to a developed matrix within which they could practice their research on an intergroup or interdepartmental level.

3. Lack of strategic planning

A constant theme of the presentations was the absence of short-term, intermediate- and long-term strategies. For the most part, the presentations represented concepts developed by a leader who had assembled a group of people with similar interests or who were prepared to function within a general framework rather than as a group with a focused target. The lack of short-, intermediate- and long-term strategies was further amplified by the lack of integration of the various different scientific disciplines in the pursuit of a single question or a group of questions related to a common topic.

Other serious issues resulting from a lack of strategic planning were the aging leaderships (40 % over 60 years) combined with few intermediate positions of well-trained scientists in modern molecular medicine, from whom future leaders could be recruited. A consequence of this is that internal, rather than external or international, recruitment is very common. This serves to perpetuate the ongoing research and precludes rejuvenation from new people, new ideas and new techniques. This issue is of crucial importance and has to be given immediate attention.

4. Isolationism and lack of international exposure

Norwegian research medicine appears to be lagging behind in general and, thus, many of the participants have not been exposed to state of the art research in other parts of the world. In particular, this has led to a loss of cohesion, a diminution in outside collaboration and has produced a sense of isolation from mainstream questions in particular scientific and medical disciplines.

The lack of external interaction with national and international colleagues and units has two distinct disadvantages. Firstly, the failure to provide state of the art transfer of information and technology on a consistent basis; secondly, the failure to place Norwegian medicine on an equal footing with investigative work being carried out in other countries and societies. This scenario is extremely detrimental in terms of supporting the growth and development of upcoming young physicians and scientists.

5. Lack of Translational Research (research bridging the basic and clinical sciences)

An overall impression was the lack of focus, except in some research groups, on translational research. Indeed, in many of the institutions, the leadership was comprised of senior persons who are not entirely familiar with the concepts of translational research nor were they in a position to investigate it. This was often further amplified as a problem by the fact that no attention had been paid to grooming bright young men or women for leadership positions. In essence, there appears to be a lack of programs to identify, train and select especially gifted young people for promotion in science, acquiring overseas training and providing them with the tools for assuming leadership positions.

6. PhD programs

The PhD programs, although generally popular, should be improved. A PhD should be utilized to support and attract young individuals who have a curiosity in clinical or investigative medicine. They should be supported in such a fashion that it is comfortable for them to undertake this work in a timely and focused fashion rather than being forced to

undertake it whilst seeking to support themselves with clinical work as well. A detrimental consequence of this system is the relatively high age of clinically active physicians when they graduate with a PhD (43 yrs). The extended length of the PhD work time is such that cutting edge research is rarely accomplished.

Moreover, each thesis frequently reflects a project entity of its own, rather than being a logical part of the main strategic research focus of the group. This adds to the impression of a scattered and diverse character of Norwegian clinical research.

7. Lack of incentives for research

There appears to be a serious financial disparity between academicians and research-oriented individuals as compared to the private or public health sectors. There is also a counterproductive difference in salary between professor I and professor II, which needs to be rectified. Professor I:s are supposed have academic work as their main activity, whereas professor II:s are mainly clinicians with a small component of academic work. Having a large salary difference between these two positions, strongly favouring the latter construction, gives a detrimental signal about the value of clinical academic research. While some degree of difference is always inherent in choice of careers, it seemed apparent that the disparities that currently exist are excessive. This should be addressed since such issues are not only a cause of serious morale problems but substantially hinder the ability to attract the best young minds of the country.

8. Leadership and leadership training

There was a distinct absence of young persons in the leadership groups as well as a paucity of women. Furthermore, there appeared to be no formal training of the leadership in management or organizational structure development. In order to make full use of the possibilities induced by the restructured Institutional groups, implemented in all universities, prominent and good leadership is a must. Programs for this and mechanisms for selection of suitable individuals must be identified.

9. Continuous evaluation of scientific excellence

Increasingly, but not uniformly, the universities and Helse regions have introduced competitiveness and scientific excellence as a basis for allocation of research money and time. A stringent national system for this could be useful and set the standards. It would also be appropriate to review on a regular basis (e.g. every three years) the scientific productivity of the professor II:s. Continued appointment as professor II should require an acceptable scientific productivity.

Suggested actions

A number of issues need to be dealt with in order to improve the overall standard of Norwegian clinical research. These issues include (in order of priority):

1. Identify money already spent on clinical research by the Helse regions and establish, together with the Medical faculties and universities, priorities for their best use including “earmarking” them for competitive grant applications (see pt.2).
2. Establish a target level for government (and Helse regions) support of money earmarked for clinical research including research time for clinically active physicians and consumables. To bring Norway to a Scandinavian level would require 3 (-5) % of the Helse budgets for the university hospitals.
3. Programs must be established to further enhance international collaborations and interaction. Norwegian clinical research suffers from a lack of international perspective.

One action could be to establish a high-ranking biomedical scientific advisory board to draw up strategies to address some of the issues that have been raised. This committee should provide information directly to the Research Council of Norway and to whatever political leaders are responsible for the process of governance and resource allocation. The composition of the board should include local authorities and international experts.

Particular attention should be paid to unique aspects of Norwegian medicine that require amplification and are specific to the needs of the Norwegian population. To further enhance international interactions, it would be valuable to arrange annual international conferences (Current Challenges in Medicine), sponsored by the Research Council of Norway, to place cutting-edge leadership from different parts of the world in close interaction with members of the Norwegian clinical and biomedical research community. Young promising Norwegian scientists should be invited, thus allowing another platform for international contacts and networking.

4. Increase the number of post-doc research positions where international training is an integral part. Increasing the “base” from where future leaders in clinical medicine can be recruited is essential.
5. Establish programs to enhance translational research. One such program could focus on post-doc positions for trained basic scientists to work in a clinical setting as well as establishing laboratory core facilities in the hospitals.
6. Surgery is an important clinical area from a national perspective. However, Norwegian research in the classical surgical disciplines seems to be, in general, weak. Programs and plans to broaden the research base and to facilitate interaction with modern laboratory technologies should be considered.
7. To establish Centers of Excellence with innovative science and technology could be an important step to move the field of biomedical science forward. These Centers can then be used as templates in the process of developing Norwegian clinical research.

After these conclusions and suggested actions, we will now proceed to summarize the material and hearings on which our evaluation is based. As stated above, the format of the evaluation is the same as that of the hearings, i.e., units which were not presented at the hearings are in general not explicitly commented upon. Our main task was to discern structural problems and strengths and weaknesses of the clinical research community, rather than peer-reviewing all individual research groups on the basis of the written material only. Regrettably, some groups which were not presented at the hearings are, therefore, not mentioned in the evaluation. We, nevertheless, hope that the feedback we do provide will be helpful also at the level of the research units.

University of Bergen

University of Bergen – Faculty of Medicine

FoM is currently organized in 6 departments; The Gade Dept, Depts. of Basic Medicine (Biomedicine) Clinical Medicine and Molecular Medicine; Surgical Sciences, Medicine, and Public Health and Primary Health Care. The Dept. of Basic Medicine will in 2003 move into a new building (30 000 m²) situated close to and physically linked to the Haukeland University Hospital strengthening the possibility for translational research. A recent program has been established where a small group of medical students are given the opportunity of combining medical studies with research.

FoM has a strategic plan which includes research priority areas (loci) focused on experimental cancer, register-based epidemiology, homocysteine and related vitamins, neuroscience, cardiac, and circulation. The aim is to promote interdepartmental research and to facilitate a translational approach.

The most important partner is the Haukeland University Hospital and joint bodies have been established between Helse Vest and FoM to promote clinically related research. This endeavour has been quite successful in stimulating and encouraging clinical research and can in several respects be seen as a template for a fruitful interaction between the Helse regions and the Universities. In 2003, 38 mill NOK were “earmarked” for clinical research on the basis of competitive applications. We also note that the Central Hospital in Rogaland, Stavanger, has a high scientific activity with a substantial research budget (17 mill NOK in 2002).

UoB founded UNIFOB in 1986 for externally funded R&D and is, in addition, part-owner of INNOVEST, a venture company for commercially interesting medical projects.

General strategic comments:

The University of Bergen is in a similar situation as NTNU, i.e., the hospital is under expansion with focus on integrating basic and clinical sciences. Restructuring the Medical Faculty to meet the demands of modern science is under way, but a number of structural problems still need to be addressed. However, awareness of the need for change provides a good opportunity for planning for the future and defining strategies.

1. Institute of Clinical Medicine and Molecular Medicine

1.1. Department structure and funding situation: The Institute is the result of a very recent merger between the Departments of Neurology, Obstetrics and Gynaecology, Ophthalmology and Paediatrics. The degree of cooperation between the different sections seems to be moderate or non-existent, i.e. the Institute seems to be mainly an “organisational label”. Accordingly, each of the four main departments gave their own independent presentation. Further along these lines, financial details were also given separately for the individual departments. The Department of Neurology has no NRC funding, despite a seemingly strong track record in terms of both publication volume and quality. The Obstetrics and Gynaecology Department seems to have a very limited scientific activity and the Department of Ophthalmology even less. The Department of Paediatrics has a relatively large senior academic staff (5 professor I and 7 professor II),

and report 3 doctoral fellows. They have had a substantial RCN funding which, however, has decreased considerably in recent years. There does not seem to be any clear quantitative relation between the number of senior academic positions in the different departments and their academic output.

1.2. Summary of SWOT analysis: The SWOT analysis was given separately for the different departments. The Dept. of Neurology emphasized its good cooperation between clinical and basic science but, like many other groups, complained of poor external funding. The Obstetrics-Gynaecology Department highlighted its strong profile in population-based studies, with a good potential for genetic studies in e.g. cancer research. Their main concern, again, was lack of external funding. The Paediatrics Department stated that it has excellent patient materials (second largest paediatrics hospital in Norway), good equipment and good international cooperation. On the weak side, they identified fragmentation into small research groups and recruitment problems.

1.3. Committee evaluation

1.3.1. Scientific output: Fair to very good.

1.3.2. Leadership: The strength of the leadership seemed to reside at the level of the research groups, in particular with the Neurology and the Paediatrics groups, which were represented at the hearing. These two units seemed to have good leadership, a positive attitude to science and a motivation to attain scientific excellence.

1.3.3. General comments: We had an in-depth presentation of only a few of the units. The Department of Neurology, specialising in immunological and genetic studies of degenerative disorders (mainly MS and myasthenia gravis), was considered to have a very good and internationally competitive scientific production with a focus on immunological mechanisms. The Department of Paediatrics also has a very good scientific production, with unique materials and application of molecular genetics on important pediatric problems. The representative of the Department of Obstetrics and Gynaecology was not present at the hearing, and the quality of the material from the unit made the scientific production hard to evaluate. The group does seem to have access to good patient materials, but their scientific production was only considered to be fair. It should particularly be mentioned that the unique biobank, consisting of normal and tumor tissues of well-defined patient material, will be of great value for genetic and molecular biological analyses. The ophthalmology unit has a very modest scientific activity (barely fair), such as participation in a few multicenter studies. This problem was identified by the Department, but they were unable to present any strategies to resolve it.

2. Institute of Medicine

2.1. Department structure and funding situation: The Institute is the result of a two-stage merger, first between two Medical Departments (1999) and then by the addition of the Institute of Clinical Biochemistry and the Dept of Dermatology (2002). It consists of 10 sections and 4 collaborating hospitals. All units are represented in the Institute Board. The Institute participates in 5 out of 6 “profile areas” (loci) of the University of Bergen.

The Institute has 16 full-time professors, 19 part-time professors and not less than 59 doctoral fellows, more than 50 % (34) of whom are stated to be externally financed (hospital money excluded). The RCN funding is moderate considering the size of the Institute (1.5 mill NOK in 2001). The exact source of the remaining external support (15 mill NOK in 2001) was not altogether clear from the hearing, but some emanate from contracted studies for pharmaceutical companies. The Institute does not seem to have any EU funding. It was our impression that the backbone of the financial research support consisted of funding from the health care system.

2.2. Summary of SWOT analysis: In their SWOT analysis, the Institute points out a number of important structural assets: participation in the university loci mentioned above, access to the Medical Research Center with its important core facilities, including molecular biology and to some extent genetics, and access to the Vivarium, an animal experiments facility that has recently moved to the Hospital area. Recruitment of PhD students (including those with a medical background), was not considered to be a problem. A major structural issue, which was clear from the written material, is the age-structure of the senior academics, many of whom may retire within a 5 year period. At present, the Institute does not seem to have a clear strategy to deal with this very urgent problem, and it was not mentioned in the SWOT analysis. Most of the professors seem to have the ambition to remain in office until 70, an endeavour that may postpone but hardly solves this problem. It is the opinion of the Committee that it is an urgent task for the leadership to redefine focus and meet the emerging needs.

2.3. Committee evaluation:

2.3.1. Scientific output: Good to very good.

2.3.2. Leadership: The documents supplied to the evaluation board were of excellent quality. The presentations, however, tended to center around the “track record” of the research groups rather than current and future structural problems. We got the impression of an informal leadership based on good and long-standing interpersonal relations. This strategy seems to work well for the time being, but in view of the fact that most of the participants are about to retire within a few years, there is a strong need for external recruitment. Integration of these, hopefully external, candidates into such a closely linked group will be a major challenge.

2.3.3. General comments: Looking at the individual units, the respiratory group has a very good scientific production in respiratory epidemiology, with demonstrated capability in handling unique patient materials. This group is also well funded by the pharmaceutical industry for research on genes in asthma and COPD. The oncology group is doing very good research on mechanisms of action of chemotherapy and hormonal drugs. They also address important questions regarding the biological background for resistance to such drugs in solid tumors as well as in haematological malignancies, with some papers in very highly ranked journals. The research program on molecular resistance mechanisms has a high degree of innovation and is internationally highly competitive. The gene therapy program is also of great interest. The Department of Oncology also has a focused research program on the development of hyperthermia therapy in combination with systemic treatment.

This program has been running for several decades. There is a good infrastructure for the clinical development. However, it is highly questionable if this medical innovation will have any impact on tumor treatment from an international perspective.

The renal research groups combine animal and patient studies with some success, resulting in good quality scientific production. The Infectious Disease Unit also has a good scientific production but, to improve the level, there is a need for cooperation instead of developing their own in-house methodologies.

The Endocrinology group has a very interesting and well-focused research program based on immunological cellular mechanisms in endocrine disease. This program is innovative and internationally competitive. The cardiology group is considered to have a too diversified scientific profile, and needs to focus on fewer areas. The current scientific production is, nevertheless, of a good quality. The gastroenterology unit, finally, has over the years produced a great number of PhD's and has been working with traditional techniques with considerable success. The section leader will retire within a few years, and the Committee has some concerns regarding succession and the seemingly unidentified need for modernisation of the methodological portfolio. The scientific production of the group is, nevertheless, good and to some extent very good. The Department of Clinical Biochemistry has a very interesting program searching for new anticancer drugs of marine and plant origin. This is a competitive field that has great potential. It was, however, difficult to evaluate this research area based on the restricted information available due to patent restrictions.

In summary, the Institute has several groups of good to very good quality. However, the leadership seems hesitant to take necessary steps to further increase the quality of the scientific output. They attribute this to difficulties in recruiting people from outside. The representatives seemed moderately concerned about the fact that most of the full-time professors will retire within a few years. Modernisation of techniques, collaboration with basic scientists, striving for excellence (including a more competitive publication profile), improved international collaboration, and recruitment of external researchers (particularly postdocs) are clearly needed to make this previously successful Institute remain competitive during the coming decade. It is highly recommended that the different departments merge their laboratories for experimental research to one laboratory where they have all the necessary infrastructure and core facilities for modern molecular biology and cellular biology. Heavy equipments require extensive investments and well-trained biotechnicians as well as special competence in analysing the results. Without such an amalgamation the various research groups will probably not be sufficiently internationally competitive. Moreover, when different research groups work close together, an intellectual critical mass is created which promotes the research climate and progress.

3. Institute of Surgical Sciences

3.1. Department structure and funding situation: The Institute consists of not less than 10 different groups, and a seemingly independent Otolaryngology and Head-Neck surgery unit. The surgical sections have 13 full-time and 13 part-time professors, but report only 5 PhD students. Most of their activities seem to be conducted by “physicians performing R&D”. They have a modest RCN funding. Many of the tenured professors are about to retire.

3.2. Summary of SWOT analysis: The SWOT analysis was made separately for the different sections. Most units acknowledge access to good patient materials (in some cases even unique ones), but also consistently express concerns regarding time for research. Recruitment of senior researchers, rather than PhD students, is regarded as the major problem.

3.3. Committee evaluation:

3.3.1. Scientific output: Fair to good.

3.3.2. Leadership: The impression from the hearing was that of a previously successful research group which has not adjusted to the requirements of today’s and tomorrow’s science. This was also identified but there was no attempt to present plans to solve the problem. The need for an enthusiastic external leader, with solid foundation in modern research, was identified as the best way to break this destructive attitude.

3.3.3. General comments: This Institute, with the notable exception of the ENT unit, seems to be uncertain about their scientific future. They regard themselves as leading in gastric microcirculation, orthopedic prostheses and MRI, but the foundation to these claims is not apparent from the material. On the contrary, the representatives admit a low scientific activity, and elaborate on various structural reasons for their problems. The scientific production is, in general, fair but with some prominence in endocrine and neurosurgery. There is a strong need to restore and modernise this previously successful unit. A strategy to deal with these and other problems, e.g., a heavy clinical load and small research units with little internal and external collaboration must be developed. In addition recruitment from outside and implementation of new cell- and molecular biology techniques seems absolutely essential. Good access to patient materials should facilitate modern translational research.

The small ENT and Head-Neck surgery unit, in contrast, seems to have a strong leadership, a good scientific production, a modern profile of their research and seemingly realistic plans for the future. Their main research was focused on the biological functions of tumor infiltrating monocytes. In this particular field, they have made interesting observations and the future aim of the research is to base therapeutic approaches on targeting monocytes in head- and neck cancer. They have an internationally competitive research program with a competent scientific leader. The main threat seems, however, to be the near retirement of this leader. It was not clear how the Department intends to handle this challenge.

University of Bergen - Faculty of Dentistry

4. Department of Odontology and Department of Clinical Dentistry

4.1. Department structure and funding situation: The Faculty of Dentistry has two departments; Department of Odontology and Department of Clinical Dentistry. The Department of Odontology consist of 14 professional fields, as well as a Centre of Clinical Dental Research (established 2003). The faculty has 6 affiliated units which are relatively closely connected with the Department of Odontology and the Department of Clinical Dentistry. The faculty runs six educational programmes and appears to have a fairly large staff. However, due to the many subunits and centres, each group is very small (usually 2-4 senior positions) and despite an extensive organisation map, it is not easy to grasp the structure. The external funding is very low – the seemingly impressive increase in 2001 is the result of a grant from the RCN for establishing the clinical research unit. This seems to be an RCN initiative and also includes a similar grant to the other Norwegian dental faculty.

4.2. Summary of SWOT analysis: On the positive side, one can mention easy collaboration with the other faculties and the location of basic disciplines within the medical Faculty. The major weakness is considered to be the multitude of small groups with too diverse research topics. More than 50 % of the senior staff is above the age of 60 and recruitment to clinical positions is regarded as difficult.

4.3. Committee Evaluation:

4.3.1. Scientific output: Fair to good.

4.3.2. Leadership: The leaders seemed well aware of the weaknesses stated in the SWOT-analysis. Although a strategy plan with priorities has been developed, there was no clear vision about the particular responsibilities for the new head of the clinical research centre. They have, as an example, not finally envisaged how this position is to interact with the research dean/dean.

4.3.3. General comments: Although the Department obviously is aware of the far too complex organisation of the Faculty, and attempts have been made to restructure it as recently as 1997, this insight does not seem to have had a strong impact. The panel was presented with very few reflections on research strategies. Instead, the focus was on structure, clinical centres and teaching problems. From the written material it seems that the majority of the publications has come from staff now close to or recently retired. It is remarkable, however, that it is not within these established strong research areas that the Faculty now has decided to focus its research strategy. Along the same lines, it was not possible to delineate if the recently enrolled PhD students are indeed recruited to the 5 focus areas. Thus, research was mainly presented as a residual activity and at this moment in time it is difficult to assess if there is, or will be, a leadership with the strength to build up a strong scientific basis for the future development of the Faculty. In the absence of well-defined plans for the role of such an individual in relation to the multitude of units, the strategy and success of recruiting new dynamic leadership to the Centre for Clinical Research does not appear convincing.

University of Oslo

University of Oslo – Faculty of Dentistry

1. Institute of Clinical Dentistry, Oslo

General strategic comments:

This institute faces two major challenges: 15 of the senior academic faculty members were born 1942 or earlier, which implies an imperative need for recruitment. Concomitantly, a political decision of a new Faculty of Dentistry in Tromsø has been made, a decision which will affect the Oslo faculty both in terms of assistance in transfer of competence and as a potential drainage of the academic staff. By maintaining a positive attitude towards collaboration with the new units in Tromsø, there could be an overall gain to the field of Dentistry in Norway. We also note that the faculty has been evaluated twice in recent years resulting in recommendations on the need for research focus and strengthening of recruitment, a process which has already been started to a certain extent.

1.1. Department structure and funding situation: This institute was reorganised from 13 into 14 departments in 1999, and the research activity is now coordinated by a Dean of Research who seemed to clearly recognize the need to implement the recommendations for change. A relevant factor in this context is that the tenured professors have clinical obligations as well as a usually heavy teaching load, which leads to a highly variable amount of time allocated for research. This heterogeneity is also reflected by a correspondingly variable scientific output, in both quantitative and qualitative terms. Until recently, this institute had very little external funding (estimation 2.5 %). However, in the last few years, this has changed for the Oral Research Laboratory, which has been able to attract both EU funding (including coordinator positions) and NRC support. This group also has a moderate funding from their commercial cooperation partners.

1.2. Summary of SWOT analysis: The SWOT analysis for the institute as a whole was positive, the main problem being handling the balance between administrative, teaching and clinical obligations versus research work. A very major problem, that was clearly identified was the age profile of the senior academic staff, half of which is due to retire in the next few years. However, encouragingly, there was a well-structured plan of action how to deal with this problem, a plan that is already at the stage of implementation. The dean has made the central university administration aware of this problem, which has led to the generation of not less than 7 PhD positions. This is a move in the right direction to balance the academic staff which is too heavily based on senior professors. The institute has a well structured and sound plan for the renewal and focusing needed to handle this challenge without losing scientific impetus. A particular asset in this context is the highly successful Oral Research Laboratory, which seems to be developing into a core facility for most of the successful research units of the institute. At the moment, its main strength is in biomaterial and implant surface research. To further promote this development, we encourage contacts with the Medical Faculty, e.g. the Section of Implant Surgery and the Biomechanics Laboratory of the Orthopedics department at Rikshospitalet.

1.3. Committee Evaluation:

1.3.1. Scientific output: Fair to excellent.

1.3.2. Leadership: The scientific contributions of the different departments range from barely fair to very high. The leaders of the Institute seemed well aware of the problems, and have decided to promote successful groups rather than maintaining units with low or diminutive production. The research dean presented a very convincing document which, if implemented, will ensure a continued positive development of this previously successful Institute. The ambition level of the document was very high. We hope that current and future leaders will have the power to enforce the very farsighted strategic plans.

1.3.3. General comments: The scientific production of the Institute is uneven, covering the whole range from barely fair to, in one case (the Biomaterial group), an excellent scientific performance. The committee was most impressed with the Oral Research Laboratory, which in a surprisingly short time has succeeded to build up an internationally competitive research activity in the field of biomaterials. This unit is involved in several EU projects, in one case as coordinator, and has an active and potentially financially fruitful cooperation with several biomaterial companies. The leader of the laboratory gave a convincing presentation and does not seem to hesitate to continue the ongoing expansion, a strategy which also seems to have full support from the leaders of the Institute. Another group that was presented at the hearing, the maxillofacial group, is small but has been internationally recognized for contributions to dental imaging. The future of this activity seems to depend entirely on the current leader.

A general problem in researcher training is the long time it takes to finish a PhD (currently 7.5 years). This should be shortened, as has also been planned for the new PhD positions, which generally are for 4 years.

In summary, the panel was convinced that if the plans for focusing and strengthening the quality of research are implemented, the Institute will be able to overcome and even grow during the period of transition needed for rejuvenating their academic staff.

University of Oslo – Faculty of Medicine

FoM is the oldest and largest medical school in Norway, established in 1814. The academic staff is around 400 and total number of students around 2000. 1100 of these are in medical school and around 450 are undergoing graduate studies towards a doctoral degree. The clinical departments are primarily located in four large university hospitals in Oslo; Rikshospitalet, Ullevål, Aker University Hospital, Akershus University Hospital and the Norwegian Radium Hospital. The Dept. of Basic Medical Sciences is located close to the recently built Rikshospitalet University Hospital.

Public funding was in 2001 331.75 million NOK and external funding 204.417 million NOK.

FoM is presently organized in institutional groups based on the individual hospitals. However, this is currently being re-considered. To facilitate translational research, FoM has established 37 thematic areas, 10 of which have been identified as priority areas with financial support from FoM.

As for the other universities, the most important interaction is with the Helse regions. For Oslo, however, this is more complicated since two different Helse regions are involved; Helse Sor and Helse Ost. During the hearings, this was repeatedly emphasized as being unfortunate and an important complicating factor.

2. Department group of Laboratory Medicine, Oslo

2.1. Department structure and funding situation: The department consists of three small units, the Department of Pharmacotherapeutics, the Department of Clinical Pharmacology and the Institute of Clinical Biochemistry linked to the Department of Clinical Chemistry. The two former units seemed to have a similar type of activity, i.e. pharmacotherapeutic counselling and conduction of clinical and cost-effectiveness-related studies. This activity is apparently financed via the health care system and/or by direct incomes from the contracted studies. It was our impression that the scientific production was largely a “spillover” from these activities. The third unit, the Biochemistry-Clinical Chemistry unit, finances itself mainly by charging for analytical work, but has also a scientific production in the field of inborn errors of metabolism.

2.2. Summary of SWOT analysis: The representative of the Pharmacotherapeutics unit recognized their poorly defined role within the administrative university structure, and was open to mergers with other units with a similar profile. The same was essentially true for the Clinical Pharmacology unit. They also emphasized their total lack of funding, but have no strategy to deal with the problem. The Clinical Biochemistry-Chemistry unit is more optimistic, and identified three future research areas, one of them being also pharmacology/pharmacogenomics. The unit has a substantial track record in the field of inborn errors of metabolism. However, two key persons behind that track record are above 65 years of age, i.e. will retire in a few years. Recruitment of new researchers is both a challenge and an opportunity.

2.3. Committee Evaluation:

2.3.1. Scientific output: Weak to fair.

2.3.2. Leadership: Since there was no apparent leadership of the whole department, we will comment on the separate units. Both the Pharmacotherapeutics and Clinical Pharmacology units had a defeatist attitude regarding their future, an attitude which very likely will be self-fulfilling. The Biochemistry-Clinical chemistry representative had a much more optimistic outlook, but not altogether realistic plans for the future. We feel that this particular group needs to be part of a stronger scientific environment.

2.3.3. General comments: It was quite clear to the committee that all activity centered around clinical pharmacology should be reconsidered. If one decides to maintain this activity, it should be centralised to one single department of Clinical Pharmacology at the University of Oslo, or to a “Clinical Research

trial Unit”. It seems imperative to recruit a new leader to such a unit, and to provide that person with working conditions which will enable him/her to build up a reasonable scientific activity. Regarding the Inborn Errors unit, it is considered to have a good potential, but it is too small and isolated. Finding new collaboration partners, preferably with competence in molecular techniques, should be their top priority in the near future. In this context this unit could also offer core facility services (mass spectrometry, molecular analyses of proteins and lipids) that are within their expertise. Research collaboration with the clinical departments could then also be strengthened.

3. Department of Clinical Medicine, Radium Hospital, Oslo

General strategic comments:

This unit seems highly successful but considers itself isolated from the university as a whole. It is closely linked to the Cancer Institute but has less intense contacts with the rest of the university. Accordingly, they have no professor I positions and report few PhD students, which is remarkable.

3.1. Department structure and funding situation: This is the major oncology unit in Norway with access to very large and unique clinical materials. As stated, it is closely linked with the Cancer Institute with very high competence in experimental cancer research. The external funding situation is relatively favourable and includes EU and RCN grants as well as very substantial support from the Cancer Foundation. They have an impressive scientific output despite a very modest academic staff consisting of only 17 part time professors (professor II) and two amanuensis II.

3.2. Summary of SWOT analysis: In their SWOT analysis, they present a very substantial scientific output, both quantitatively and qualitatively. They also seem to have a very favourable recruitment situation, with the possibility to choose between a large number of candidates for their clinical training programmes. They attribute their high scientific output to dedicated team work and a strong local tradition of regarding research as a “core activity”. There are plans for a new research building which will include most of the Cancer Institute, thereby promoting translational research. Their main concern is the lack of full time academic positions (professor I), the allocation of which would allow more productive interaction with research groups at the Cancer Institute and elsewhere in the university. They also regret the fact that they are at the moment “cut off” from e.g. strategic discussions within the university. A potential threat is the reorganisation of the Health regions, which may reduce regional referrals.

3.3. Committee Evaluation:

3.3.1. Scientific output: Very good.

3.3.2. Leadership: In view of their very limited academic resources, this unit has a remarkably high scientific production. We also got the impression of a very science-friendly atmosphere and a clear strategy to include high-quality scientific activity as a natural component of their clinical duties. Creating a team of this kind implies a very competent and dedicated leadership.

- 3.3.3. General comments:** This unit has a scientific production of not less than 140 yearly publications with a median impact factor of 3.3 that are nominally generated by the equivalent of 3.5 full time professors! High quality of research is based on good collaborations and networking. The departments have excellent patient materials and participate in many therapeutic trials. Obviously this unit is understaffed on the academic side, a situation that needs to be rectified. They have a very favourable recruitment situation which makes it likely that individuals appointed on these academic positions can indeed use their time for active research rather than clinical work. In some departments, however, the clinical work load was considered as a hindrance to research. Some units have reported insufficient information technology support and lack of clinical core facilities. These problems should be solved.

We only had a more detailed presentation of a few of the projects, and got an impression of an uneven scientific quality. Projects of very good scientific standard are those dealing with micrometastases, long term effects of cancer treatment, cancer genetics and counselling. The uneven scientific quality may reflect insufficient interaction with the Cancer Institute. The small and dedicated leader group of this unit clearly carries a heavy clinical and administrative burden, and recruitment of new full time academics will not only make it possible for them to pursue their scientific interests and further increase the scientific output, but will also help to generate a more dynamic local scientific environment. Along the same line, we recommend exchange of PhD students between the Cancer Institute and the Radium Hospital, to make optimal use of preclinical and clinical research environments. The clinical oncologists seem to encourage their graduates to take up postdoc positions abroad, by guaranteeing them a position when returning to Norway. This is very positive and, along the same lines, we encourage the senior academics to increase exchange of ideas and techniques e.g. by sabbaticals abroad. Implementation of this type of schemes will be promoted if the Institute receives its well-deserved increase in tenured academic staff.

4. Department group of Clinical Medicine

- 4.1. Department structure and funding situation (whole department group):** The whole department group involves not less than 39 different clinical departments, in three hospitals. It is organised into a great number of units, most of which were presented briefly during the hearing. The academic staff consists of 101 academics, 35 of whom are professor I and 66 professor II. These positions are unevenly distributed within the department group. The total university funding was 50 million NOK in 2001 and 64 million NOK in 2002. The external funding was stated to be 94 million NOK in 2001, i.e. about 65 % of the total budget. The department group is relatively loosely knit structure headed by a dynamic leader, but apart from self-chosen scientific cooperation, the individual departments operate seemingly independently of each other. They also have totally diverse scientific profiles, which makes it necessary to evaluate each unit separately.
- 4.2. Summary of SWOT analysis (whole department group):** Positive factors mentioned are access to good basic research laboratories, diverse and stable patient populations, a positive development of the operational budget and support of thematic groups and

scientific leadership, by both the University and Hospital. They also acknowledged good national and international networks. On the negative side were fragmentation into small units, lack of permanent technical positions and difficulties in balancing the demands of the clinical organisation. Opportunities include new matrices for cooperation with industry, access to EU programs and increased awareness of the value of high-quality scientific production. Their main concern seems to be uncertainties regarding the consequences of reorganisation in the health care system, resulting in reduction or loss of unique patient materials.

We will now describe and evaluate the individual departments.

5. Department of Medicine, RH

5.1. Department structure and funding situation: Seven research groups were represented at the hearing, one of which (Thrombosis research) does not formally belong to the Department. The total academic staff consists of 11 university employed academics and not less than 46 externally financed doctoral fellows, postdocs, technicians etc.

5.2. Summary of SWOT analysis: In the overall SWOT analysis, the presenter (professor I) stressed the lack of cooperation with preclinical research. Going through the individual units, the nephrology-transplantation unit highlighted its very large patient material (top 10 worldwide in kidney transplantation), but admitted they have been slow in implementing molecular techniques for research. Their future profile seems to be cardiovascular risk factors in transplanted patients. The chronic inflammation unit stressed its well-working cooperation with preclinical units, and expressed concern regarding difficulties in “tailor-making” combined positions. The endocrinology unit is performing unique patient studies, but is worried about disintegration of these materials due to the reorganisation of the health care system. They were also worried about their dependency on industrial support. Hepatology-gastroenterology has no economic concerns but has general worries about recruiting PhD:s. Hematology contributes to unique patient materials (e.g. myeloma and stem cell groups), but has poor access to laboratory facilities and at the moment no head of their research group. The lipidology-atherosclerosis group has participated in a large number of single/multicenter trials, an activity that is also their main source of income. They wish to pursue research on their own unique material of patients with familiar hypercholesterolemia and rare lipemic disorders. Thrombosis research, finally, complained of isolation and poor recruitment.

5.3. Committee Evaluation:

5.3.1. Scientific output:

Nephrology-transplantation:	Good.
Chronic inflammation in immune disease:	Good to very good.
Endocrinology:	Good.
Hepatology-gastroenterology:	Good to very good
Hematology:	Fair to good.
Lipidology-atherosclerosis:	Good.
Thrombosis research:	Good

5.3.2. Leadership: The impression at the hearing was that of a good leadership within the department, with a reasonable balance between common interests

and freedom for the individual groups to pursue their own profile. We also noted that the department head chose to present both highly successful and more problematic areas of research, indicating awareness of problems. An important issue is to find new paradigms for cooperation with the preclinical departments, and this issue seems not be given sufficient priority. Clearly, there is a need to modernise some of the activities within the department. This task may be easier to undertake by a young, dynamic scientist skilled in molecular techniques. Recruitment of a scientific coleader within the next few years seems essential to preserve the competitiveness of this relatively successful unit.

5.3.3. General comments: The nephrology-transplantation unit does not seem to make optimal use of its unique patient materials - in particular, they have been too slow to pick up molecular techniques. Therefore, the research has remained at a rather standard level. The unit would benefit from placing the future focus on more innovative questions and utilization of modern techniques. The chronic inflammation unit, a thematic area within the Faculty, is seemingly well supported and has good access to preclinical laboratory facilities. They have a strong scientific activity, manifested e.g. by a growing NRC funding. Their major problem seems to be to optimise communication between immunologists and clinicians, a task that will demand a person with dual competence, preferably in a tenured academic position (professor I). More research focus should be put on cause-effect studies and attempts to address mechanisms. The endocrinology unit is too heavily dependent on clinical trial funding. However, it has been successful in finding its own niche and focus. The hepatology-gastroenterology unit is very positive in their SWOT analysis, their main concern being recruitment. However, one gets the impression that they also need to sharpen their methodology with modern molecular techniques, which is most realistically done in cooperation with preclinical units. Their links to basic sciences could thus be further strengthened. The haematology unit does not seem to have any strong profile of their own, and may need to merge or interact deeply with other similar units to increase their scientific environment. Hematology in the Oslo area seems too fragmented and a merger should be considered. Lipidology-atherosclerosis research has the same problem as endocrinology, i.e. a too heavy dependence on incomes from clinical trials. They do have access to unique materials in a clinically important and active field of research, and should consequently be able to finance their scientific activity also by other means. They are also evidently understaffed on the academic side. The leader of the thrombosis group, finally, seems to be at loss regarding their scientific future. A good solution would be to merge with other units with a similar profile. The large number of small groups, and consequent lack of critical mass, is a general problem at the Department of Medicine. Pooling some units would make it possible to recruit technical staff and utilize it for the benefit of several groups. Also, recruitment of postdocs with experience in molecular biology techniques would be of great benefit for the Department.

6. Interventional Centre, RH

- 6.1. Department structure and funding situation:** The intervention centre is an example of creative thinking that has generated a unique facility for interventional research. The unit was created by a parliamentary decision in 1995 which was also linked with substantial funding. This funding is now consumed, and running costs are covered through the hospital budget, by users of the facility and also by substantial external grants, including the RCN. It has maintained its independence by being directly under the head of the Rikshospitalet and thus outside the formal hospital structure. The centre operates as a “core facility” with an advisory board that considers proposed projects on scientific and, to some extent, commercial grounds. It has developed its own paradigm for handling commercial exploitation of the projects. It has very little funding and no tenured positions from the university.
- 6.2. Summary of SWOT analysis:** In their SWOT analysis, the Centre regards itself as very successful and innovative, with a very good national and international reputation. There is a worry about lack of “buffer funds”, the economy being entirely based on high throughput of study patients. The current good economy may thus rapidly change if there is a reduced inflow of patients. The main threats are considered to be lack of acceptance of the concept and, in some instances, a lack of understanding from health care authorities. There is also a risk for competition from other centres with a similar profile.
- 6.3. Committee Evaluation:**
- 6.3.1. Scientific output:** Good to very good.
- 6.3.2. Leadership:** This unit has a strong leader with a clear production-oriented profile. It is the impression of the committee that there is a risk that this unit can be forced further in a commercial direction by fluctuations in patient inflow. We, therefore, recommend recruitment of a scientifically strong second leader to ensure high scientific competence and activity of the center.
- 6.3.3. General comments:** The center is highly innovative and represents a very interesting solution to ensure access to high quality operative room equipment for advanced invasive studies. The unit needs to be boosted by tenured academic positions, and should also obtain some kind of “buffer funding” to avoid pushing it too hard in the commercial direction. Other departments with a surgical profile should be encouraged to make use of this unit. We noted that some of the ongoing activities (e.g. nerve block research) do not really warrant these unique facilities, possibly suggesting a limited demand. It is the opinion of the committee that with optimal executive and scientific leadership, this unique unit has good chances to develop into an innovative example of the “operating room of tomorrow”.

7. Department of Cardiology, RH

- 7.1. Department structure and funding situation:** The department has one university financed professor I, who is also head of the department group, one professor II and one technical position. The remaining activity, which is quite extensive, is externally financed from various sources, including Heart Foundation, RCN and various private funds. Research is organised into four major thematic groups; cardiac function and imaging, heart failure, integrated cardiovascular function and electrophysiology. The first three of these were presented at the hearing.
- 7.2. Summary of SWOT analysis:** In the overall SWOT analysis, the department is very positive regarding funding, recruitment and scientific environment. They point out the small size of the heart failure group and are worried about scarcity of permanent technical staff. About a third of the consultants are at a given time busy with research projects, reflecting the high activity of this unit.
- 7.3. Committee Evaluation:**
- 7.3.1. Scientific output:** Excellent.
- 7.3.2. Leadership:** The current leader seems very competent, with a clear strategy to ensure the further growth of this very successful unit. He is also aware of the need to eventually recruit a successor, but feels confident that persons with the necessary qualities will be readily available.
- 7.3.3. General comments:** This unit has an impressive scientific activity where it is hard to identify problematic issues. However, they seem to have a relatively low profile in molecular cardiology, which would be a nice complement to their studies of early ischemic damage. The imaging group has good cooperation with industry, which may help generate part of the substantial funding they obviously need to continue and further expand their highly internationally competitive activity.

8. Anaesthesiology, Neuroscience (neurology and neurosurgery), and Otorhinolaryngology, RH

- 8.1. Structure and funding situation:** These units were presented together and will therefore be described together, but otherwise do not have any structural or financial common denominators. The anaesthesiology unit has one professor I (who was not present at the hearing), one professor II and one university-financed technical position. Most of their consultants have a scientific training. They have a substantial and increasing NRC funding and a seemingly well-working cooperation with industry and Medinova. The neurology group has six university-financed positions (one professor I and five professor II). It has a moderate external funding, part of which emanates from the NRC. They also acknowledge that a substantial part of their research is performed by physicians performing R&D without university support. Neurosurgery has one professor I and claims not less than three externally financed positions, the financial basis of which was not clear from the presentation. They have a small amount of RCN funding and no PhD:s have graduated during the previous 3 year period. The ENT section, finally, has nominally not less than nine university-financed positions (five

professor II:s), six of which are currently vacant due to staff transition into private practise. They no longer have any RCN funding. This unit is about to merge with the ENT unit at Ullevål Hospital.

8.2. Summary of SWOT analysis: Anaesthesiology emphasizes its good international cooperation networks and competitive publication profile. Their main worry is the clinical workload which is detrimental to scientific production. The neurology unit has a broad range of scientific interests, which is regarded by themselves as a strength. They consider themselves methodologically robust but are concerned about lack of regular positions for research fellows and limited space for research. Neurosurgery claims a widespread scientific activity with adequate space and a “low interference leader profile”. This is, however, also seen as a disadvantage with risk for “solo performances”. Like almost everyone else, they complain about the clinical load. The otolaryngology unit, finally, acknowledges unique patient materials and good laboratory facilities but admit shortage of academic staff. They are unable to identify any threats to their scientific activity.

8.3. Committee Evaluation:

8.3.1. Scientific output (given separately for individual units):

Anaesthesiology:	Good to very good.
Neurology:	Good to very good.
Neurosurgery:	Good
Otolaryngology:	Good.

8.3.2. Leadership: This can only be commented on at the unit level. The anaesthesiology representative (who was not the current professor I) gave a convincing presentation and a strategy for succession. The neurology unit has a sprawling activity in four different areas suggesting fragmentation and possibly lenient leadership. This type of leadership (“no interference”) was overtly declared by neurosurgery, but the productivity of the group raises questions whether this is indeed the best strategy. Otolaryngology, finally, seems to have collapsed despite impressive university funding. Whether this is due to poor leadership or structural issues was not clear from the hearing. The new merged ENT department has to recruit a leader strong enough to ensure that this does not happen again, a leader who should preferably be supplied with a “clean desk”.

8.3.3. General comments: All units have a good and in some instances very good scientific production but in some instances we identify leadership and /or priority problems which may lead to a negative development. The anaesthesiology unit seems to have a robust scientific activity, with a plan to handle the succession of the current group head. The committee noted a relatively strong profile in postoperative and chronic pain research and a lower profile in “operating room research”. We recommend contacts with the Interventional research centre as well as other groups working in the pain area. The neurology unit seems fragmented and needs to focus. The epilepsy unit lacks molecular competence and the pain research group should link up with the pain research in e.g. the anaesthesiology group and possibly also in preclinical departments. The strategy of opening up yet another research area

(movement disorders) seems questionable in view of limited human and economic resources. Emphasis should be more on high quality research. So far, no studies have been published in the top neurology journals. The neurosurgery unit also needs focus – with its heavy clinical load and small academic staff it is not realistic that this unit will remain competitive in areas ranging from cell biology and metabolism to hemodynamics, cerebrospinal fluid dynamics, hospital economics and quality of life! Making these, sometimes painful, strategic decisions is the task of the group leader, and the declared “low interference leadership profile” is a likely cause of the situation. This leadership strategy has to be reconsidered, or otherwise a new leader with a more realistic policy will need to be recruited. The ENT unit seems to have collapsed. It is, of course, crucial that the new merged unit does not “inherit” the same structural and/or leadership problems. If the scientific activity of this unit does not recover rapidly, its allocation of academic resources should be reconsidered.

9. Gynaecology-Obstetrics, Pediatrics, RH

9.1. Structure and funding situation: Like above, these units were presented together and will therefore be described together, but otherwise they do not have any structural or financial common denominators. The gynaecology unit contains four sections: gynaecology-women’s health, high risk obstetrics, fetal medicine and a fertility section. The entire unit has three professors (one professor I) and one university financed fellow. They also claim eight externally financed doctoral fellows, two of whom are from 3rd world countries, financed on stipends from various sources. The unit has a substantial NRC funding (about 1 million NOK/year). The pediatric unit is organized into eight sections. It has two professor I and five professor II (three externally financed) and five fellows (including one postdoc) and a technical position, all financed by the university. They also claim two externally financed professor II and not less than 11 externally financed PhD students. Their NRC funding is decreasing and it seems that the bulk of their funding emanates from various public funds (Cancer Society, Heart and Lung, Health and Rehabilitation) and recently a substantial EU funding.

9.2. Summary of SWOT analysis: The gynaecology-obstetrics unit considers itself as being at a high international standard, as reflected by invitations, awards etc. They consider themselves particularly strong in perinatal and fetal medicine, with high competence in “high tech” applications. Their main concern is difficulties in recruitment, which they have partially solved by recruiting PhD:s from abroad, including 3rd world countries. They express concerns regarding their ability to maintain their high scientific activity in the face of the increasing clinical work load. The pediatric unit considers itself solidly placed on the scientific map, with good recruitment and a reasonable funding situation. Their main worry is change of patient flows, resulting from the recent regionalization of the health care system in Norway, which threatens their unique patient materials and complicates economic planning. They also have concerns about lack of priority given to pediatric clinical research. They acknowledge fragmentation, but consider this as a consequence of being obliged to have a “full assortment” of clinical competence.

9.3. Committee Evaluation:

9.3.1. Scientific output (given separately for individual units):

Gynaecology-obstetrics: Good to very good.
 Pediatrics: Good to very good.

9.3.2. Leadership: The gynaecology-obstetrics unit gave a good presentation and their representative expressed pride and a positive outlook regarding the accomplishments of the unit. She also gave a balanced view of the different sections and seems well capable of handling structural priority decisions. We got the impression of a massive workload, suggesting that the leadership should be divided on more shoulders. The pediatrics unit likewise gave a good presentation of their high scientific activity. There is a succession problem which needs to be addressed, but the team seems to have identified this problem. We got the impression of an open atmosphere and a constructive attitude within the group, suggesting that the issue will be solved without loss of impetus.

9.3.3. General comments: The gynaecology-obstetrics unit has a particularly strong profile in perinatal and fetal medicine, and the major question is whether the unit will be able to build up and/or maintain excellence also in other areas. In view of the obvious recruitment problem, which in the long run is not solved by recruitment from other countries (eventual loss of continuity), they should consider focusing on their area of strength. The plans for creation of a Center of Perinatal Research is an initiative along these lines, which should be encouraged. This view is further supported by the fact that perinatal nutrition is a priority area in the Oslo region. The large input of 3rd world PhD students definitely has a value of its own and should by no means be discouraged, but it is important that this strategy is combined with funding of research fellows/internal postdocs, otherwise the unit may “bleed to death” when these persons return to their native countries after graduation.

The pediatrics unit has a large and stable publication volume but will need to focus. It seems unlikely that they will be able to build up scientific excellence in all these areas on their own. The route ahead consists of establishing cooperation both locally and internationally. They obviously have a “good name” and should easily find collaboration partners. The large EU grant to the allergy unit is encouraging, and if it turns out that some units develop very favourably whereas others run into difficulties, the leaders may have to make painful priority decisions. It is important that these decisions are made on scientific grounds and not on the basis of capricious changes in patient flows resulting from political decisions. They also have to find a way to deal with the threat of losing their unique patient material due to the health care reorganisation. This is a challenge for the current leader which he was seemingly aware of.

10. Radiology, Respiratory Medicine, Surgery, Thoracic Surgery, RH

10.1. Structure and funding situation: Like above, these units were presented together and will therefore be described together, but otherwise they do not have any structural or financial common denominators. The radiology department has six university-financed positions, including one professor I and three professor II, but have no external funding. They have not trained any PhD students during the evaluated period. We got the

impression of a major academic staff leakage to private practise. The radiology unit has recently merged with the nuclear medicine department, but the value of this merger was not commented on during the hearing. The department of Respiratory Medicine has one professor I and one professor II. They have trained two PhD:s during the relevant period. They have RCN funding together with the Center for Occupational Medicine and a small grant for Working Environment studies. The surgery unit has currently no academic leader but is allocated two professor II. The thoracic and cardiovascular surgery department has one professor I and an associate professor (II). They claim an extensive, mainly local, cooperation and five current PhD students. They state that they have some external money, but the exact source of this funding was not clear from the hearing.

10.2. Summary of SWOT analysis: The radiology unit acknowledges its access to modern equipment and modern laboratory facilities, but notes low interest for vacant academic positions, probably also reflecting a less attractive scientific environment. Respiratory medicine claims to have one of the most modern laboratories in Europe. They regard themselves as very competent in epidemiology and they have access to a unique material on lung transplantation. On the negative side they see fragmentation and insufficient academic staff to fulfill their high ambitions. They also express concerns about a possibly changed organisation of thoracic surgery in Oslo. The surgical unit gave a very vague SWOT analysis containing mainly general remarks on access to patient materials, heavy clinical load etc. They do, however seem to have reasonable access to laboratory facilities and contacts with basic science. Thoracic and cardiovascular surgery has a unique case register since 1981. They appreciate their close contacts with the intervention centre and seem to have contacts with transplantation and pediatric medicine. Except for interactions with pediatric thoracic surgeons in Western Sweden, their international cooperation is very limited.

10.3. Committee Evaluation:

10.3.1. Scientific output (given separately for individual units):

Radiology:	Weak.
Respiratory medicine:	Fair
Surgery:	Weak
Thoracic and cardiovascular surgery:	Good

10.3.2. Leadership: The radiology unit has a small or almost non-existent scientific activity, despite a nominally large academic staff which, however, no longer exists possibly due to an unproductive scientific environment. The fact that five professors simultaneously leave the department also raises serious concerns regarding leadership. In the case of the Respiratory Medicine unit, there is an obvious discrepancy between their own SWOT analysis and the very modest scientific output, again raising questions regarding the degree of contacts between active researchers and team leaders. The group acknowledges excellent conditions for research in the respiratory laboratory, and it should be up to the academic leader to convert this opportunity into scientific output. The surgery unit does not seem to have any academic leadership at all at the moment, as also reflected by the very vague description of its seemingly random low scale activities. In contrast, the representative of the cardiothoracic surgery unit, which has a moderate to good scientific activity, seemed aware of

its shortcomings, and was looking for support from e.g. the leaders of the Intervention Centre. With this constructive approach, he may be able to break the current negative trend.

10.3.3. General comments: The scientific activity of the department of radiology is very low, despite ample access to modern equipment and laboratory facilities and a comparatively large academic staff. This is also reflected by total lack of external funding and no PhD graduations during a three year period. It has also lost five professors, probably due to structural problems. The leadership and/or the academic status of this unit should be reconsidered

The Respiratory Medicine unit has a modest but real scientific activity, and there is no structural reason why this activity should not be considerably larger. They consider themselves as “slow publishers”, but if this is the explanation, the quality of the eventual publications should reflect that attitude, which is not the case. The way out of this situation is to focus on areas of strength, i.e. activities based on the respiratory laboratory which seems to meet international standards.

The surgery unit, like the radiology unit, has a barely existent academic activity. They did not supply us with any financial details, but it became clear from the hearing that they have very little scientific activity and no external funding. Their attitude, i.e. that one should follow up the outcomes of their routine procedures, is not appropriate for an academic clinic, and both the leadership and possibly also the academic status of this unit should be reconsidered.

The thoracic surgery unit also has a relatively modest scientific production but, in contrast to the radiology and surgery units, they are aware of the situation and seem to have a plan to deal with it. To implement this plan, they need help from more executive leaders, e.g. those of the Intervention centre. They should also link up with other units with an interest in cardiothoracic circulatory physiology and pathophysiology, e.g. anaesthesiology and the pediatric unit. With active leadership and “vitamin injections” from more active units, this department should be able to break the current negative spiral.

11. Department group of Oslo Municipal Hospitals

11.1. Department structure and funding situation (whole department group): The organisation of this department, which involves four hospitals (Ullevål, Aker, Diakonhjemmet and Sunnaas Rehabilitation Hospital) and not less than 50 clinical units, is quite complex. There are 19 departments at Ullevål and six at Aker, one each at Diakonhjemmet (Rheumatology) and at Sunnaas (Rehabilitation). The department group has seven professor I (all at Ullevål) and 61 professor II, 19 of whom are financed by the university. It has 30 doctoral fellows, 19 of whom are financed by the university, and seven postdocs. A general comment was that the complex organisation, paralleled by a similar complexity on the health care side, makes the interaction between the university and hospital very difficult. It was also stated that the Helseregion only makes a very minor formal contribution to research (allegedly around 0.1 % of the health care budget). The department group has a growing NRC funding (6.6 million NOK in 2002)

and about three times as much from public or private funds like the Health and Rehabilitation fund and various private donations.

11.2. Leadership: Like in Rikshospitalet, we got the impression of a loosely knit structure with very large freedom for the individual departments to pursue their own interests. This attitude will obviously lead to fragmentation and loss of focus, a problem which the leaders seemed aware of. Another problem is the low degree of support from the hospital, which makes negotiations about working conditions very difficult. However, no strategy to deal with these issues was presented at the hearing.

12. Medical division (Cardiology, Internal Medicine Research Lab, Haematology, Oncology), Ullevål

12.1. Department structure and funding situation: These units operate independently of each other, but were presented together and will therefore be evaluated together. Unfortunately, no economic particulars in writing were given for the individual units. The profile of the cardiology unit is large clinical trials which are mainly run independently of the pharmaceutical industry. It has one professor II, one hospital financed senior scientist, three postdocs and six PhD students. They have external funding from various sources, including being part of a relatively large NRC project (“From fjord to table”). The profile of the Internal Medicine Research lab is pathophysiology of the metabolic syndrome. They finance their activity to a large extent by clinical trials, being part of large international interest groups in the hypertension area. The haematology unit consists of a thrombosis research section and a clinical haematology research section. They have together eight senior scientists and six PhD students. They seem to have or will soon have access to a small but modern haematological laboratory. The oncology unit states that it is in the process of expansion into a large cancer centre, as a consequence of the recent regionalization of cancer treatment. It has two professor II and four PhD students. There are also plans for a new cancer research centre at the hospital. They have very little external funding, which they attribute to being in a “build-up phase”.

12.2. Summary of SWOT analysis: The strength of the cardiology unit is considered to be high competence in handling large patient materials and a good recruitment situation. Their attitude of independence towards the pharmaceutical industry makes them dependent on external funding. This type of funding is hard to use for building up analytical core facilities and administrative support, resources which are needed to pursue this time- and resource consuming activity. Internal Medicine points out their strong international collaboration but is also worried about funding and time constraints. The haematology unit has access to unique patient materials but considers itself fragmented and too weak in molecular medicine. The oncology unit is very enthusiastic about the opportunities generated by the regionalization of cancer treatment, and plans to concentrate on “common tumour types”. Being in a build-up phase, they almost totally lack academic support.

12.3. Committee Evaluation:

12.3.1. Scientific output:

Cardiology:	Very good.
Internal Medicine Lab:	Good.

Hematology: Very good.
Oncology: Fair

12.3.2. Leadership: The cardiology unit has a wish to maintain its independence from the pharmaceutical industry. We got the impression that the current leader is able to maintain this sound but costly attitude. He will need, and should get, support from the public systems to be able to pursue this strategy. The Internal Medicine lab is seemingly run by a very dedicated individual who also seems to carry a heavy work load. The haematology unit admits that it has neglected building up a molecular competence, which is central in modern haematology research. The oncology unit, finally, has a very enthusiastic leader with not altogether realistic ambitions to build up a new centre for “common tumour research”. This plan should by no means be discouraged, but to make it realistic, he will need help from more experienced scientific oncologists from the Radium Hospital.

12.3.3. General comments: The quest for commercial independence of the cardiology unit should be recognized and supported. The unit has a very good scientific output and will need core facilities and administrative support to pursue this line. Conducting good quality clinical trials is very costly, particularly if the hospital charges its full costs. This group has addressed several questions of large clinical but low commercial importance, e.g. the benefit of aspirin treatment, and the results of these studies are of great economic importance for the health care system (and also indirectly to the university). This group should therefore be supported by both university and hospital funding.

The Internal Medicine unit has an impressive output in view of its very small size. Its scientific activities are mainly financed by clinical trials, which in the long run is not sound. They would probably benefit from cooperation with other units with expertise in clinical physiology, endocrinology and autonomic nervous system research.

The haematology unit, particularly the thrombosis unit, has a very good scientific production, but has neglected developing a competence in molecular haematology. They have good access to important patient materials. Haematology in Oslo seems fragmented and it is the opinion of the committee that it should merge and be allocated resources to build up a more modern profile, preferably in cooperation with the Radium hospital and preclinical departments. If this does not happen, there is a real risk that Norwegian haematology will be internationally marginalized.

The oncology unit, finally, has very ambitious plans to build up a scientific activity in the wake of patient flows directed away from the Radium Hospital. It is hard to judge if this ambition is realistic or not. If it is to succeed, it has to be implemented in cooperation, not competition, with the Radium Hospital and Cancer Institute. The unit should also try to find some kind of unique scientific approach, otherwise there is a risk that their scientific output will mainly consist of outcome research which can be performed by any large-size oncological unit.

In general, the units have a reasonable scientific output but the quality needs to be improved. The individual research units are too small, and no core-facility structures have been established. There is a burning need for recruiting molecular biologists and biochemists to the research laboratories. The skills of the clinical scientists in the basic sciences need to be improved, and a system created whereby motivated researchers clinicians can allocate more time for research. Although Ullevål is the biggest hospital in Norway, its research budget seems very small. The hospital, however, with its valuable clinical material should have an excellent possibility to create new research traditions given the right support.

13. Anaesthesiology, Surgery, Orthopedics, Ullevål

13.1. Department structure and funding situation: These units operate seemingly independently of each other despite daily close contacts in the clinical work. However, they were presented together and will therefore be evaluated together. Unfortunately, no financial particulars in writing were given for the individual units. The Department of Anaesthesia consists of an anaesthesiology unit and a prehospital emergency unit. The anaesthesiology unit depends heavily on a single person (professor II) and stated that they finance 95 % of their activity with external grants. They have one NRC financed doctoral fellow. The prehospital emergency unit, which is independent from the anaesthesiology unit, was regarded as being among the world top 3-4 centres in that field of research. Their ability to commercialise their research is limited by the small Norwegian biotechnological industry. They have currently one external financed professor I, and four PhD students, one of whom is physically located in Stavanger. The surgery unit seems to have a very low and fragmented activity, with mainly outcome research. They do not seem to have any external support. The orthopedic unit is the largest orthopedic department in Norway and consists of three professor II, one senior lecturer and 10 PhD students, all but one externally financed. They have the ambition to be at a top international level in clinical research. They have a large external funding, both from the NRC and from sources related to their interest in sports medicine. They also have regular external site visits which are paid by a non-restricted grant from a pharmaceutical company. They are working actively to create positions that will enable the combination of high-class science with clinical activity, both before and after graduation.

13.2. Summary of SWOT analysis: The anaesthesiology unit is satisfied with the research atmosphere but is too heavily dependent on one single person. They also feel they lack infrastructure and IT support. The separately presented prehospital emergency unit has a very strong international position but is worried about new legislation which may endanger or even stop this type of research. The surgery unit considers its wide interests as a strength. They are also proud of their activity in the area of surgery simulation for training purposes. They have recruited a clinical fellow with training in molecular medicine, which they regard as an important investment for the future. On the negative side they mention lack of modern laparoscopic equipment and IT support. The orthopedic unit feels it has a strong leadership and high goals, a large patient material for research and a reasonable financial support. They are worried about the problem of keeping PhD:s in research and mention mentor programmes as a concrete goal. They also feel they lack long-term financial support.

13.3. Committee Evaluation:

13.3.1. Scientific output:

Anaesthesiology:	Very good to excellent.
Surgery:	Fair to good.
Orthopedics:	Very good to excellent.

13.3.2. Leadership: The anaesthesiology unit has a very good scientific production but is heavily dependent on a single individual, a problem that is recognized but not solved. The prehospital unit representative gave a convincing presentation and seemed well capable to further develop this successful line of research, including the threats resulting from changes in legal aspects around informed consent in emergency situations. The current leader should be able to handle these complicated issues, since he is an acknowledged and highly regarded international opinion leader in the field. The surgery unit gave the impression of a weak leadership, as also reflected by low activity essentially consisting of outcome research. The orthopedic unit has a vigorous leadership with very high goals and a clear strategy to attain excellence. The system with regular site visits is highly recommendable and again reflects the high ambitions of this group.

13.3.3. General comments: The anaesthesiology unit has a very good scientific production but depends too heavily on the current leader. The prehospital emergency unit has an excellent scientific production with a top international position within its area. However, there is a risk that legal restrictions regarding informed patient consent in emergency situations may be detrimental to this type of work. The unit is well aware of the problem, and has a competence and an international network that makes it likely that this threat can be handled in a constructive fashion. Depending on how this issue develops, the research may have to be redirected, decisions which will demand a strong leadership. The activity in pain research should, if it is pursued or expanded, be coordinated with other similar activities in the Oslo area, irrespective of geographical location.

The activity of the surgery unit mainly consists in outcome studies, and their scientific environment seems to be virtually non-existent. We recommend that they link up with other surgery units and/or the Intervention centre, to rekindle a scientific production. The orthopedic unit, with its strong leader, has an altogether different attitude, with very high goals including a positive attitude to 21st century medicine. The site visit system is highly recommendable. In view of its large and expanding activity, it should be given priority by the university in allocation discussions.

14. Gynaecology/Obstetrics, Paediatrics, Ullevål

14.1. Department structure and funding situation: These two units operate independently of each other, but were presented together and will therefore be evaluated together. The profile of the gynaecology-obstetrics is circulatory problems during pregnancy. They have four professor II, one research fellow and not less than four part time postdoc positions financed by the hospital but obtained in competition. The external funding situation was not clear from the hearing. The pediatric unit has a wide range of interests

from neonatology, inflammatory reactions in children, neurodegenerative diseases and childhood asthma. It is the largest pediatric unit in Norway, with four professor II, one postdoc and six full time PhD students. Their external grant situation was not clear from the hearing, but they complain about funding problems in the SWOT analysis.

14.2. Summary of SWOT analysis: The gynaecology-obstetrics unit has large patient materials but a short scientific tradition. They consider themselves to be in a build-up phase. They seem to have been creative in establishing opportunities for combined scientific and clinical activity. The pediatric unit has a strong scientific profile in their clinical staff, a good infrastructure and large and unique patient populations willing to participate in research. They are aware of the vulnerability of small size research groups.

14.3. Committee Evaluation:

14.3.1. Scientific output:

Gynaecology-obstetrics:	Fair
Pediatrics:	Good

14.3.2. Leadership: The gynaecology-obstetrics unit had an enthusiastic leader actively engaged in the build-up phase of this unit with a short scientific history. She seemed well aware of both the opportunities and threats and gave the impression of being capable of handling these challenges. The leader of the pediatric unit presented a very fragmented organisation with a seemingly randomly sprawling scientific activity. Several research modules give an impression of “random pursuit of individual interests”, which may not always be the best way of using available resources. Making these priorities is a challenge for the leader of the unit which he did not seem altogether willing to meet.

14.3.3. General comments: The gynaecology-obstetrics unit has only just started to build up its research activities, which is reflected by their relatively modest scientific output. However, at the hearing we got the impression of high ambitions, an impression that is strengthened by the fact that they were awarded not less than four PhD positions in competition. Their profile is different aspects of circulation during pregnancy, and they should not hesitate to consult expertise in cardiovascular physiology, fetal medicine, thrombosis research and cardiovascular monitoring research in the Oslo area for practical help when building up their activity. This is particularly important since their modest scientific production makes it hard for them to win large external grants at the present stage. It is also important that the hospital recognizes their high ambitions which can easily be thwarted by escalating demands on clinical production.

The pediatric unit, which seems to have a well established scientific organisation, seems fragmented. The diabetes group should link up with the Diabetes Thematic group, and the asthma group should collaborate with the successful allergy-asthma group at Rikshospitalet. The future of the other groups depends on their ability to find cooperation partners and to attract external funding.

15. Departments of Clinical Chemistry, Rehabilitation, Geriatrics, Radiology and Pathology, Ullevål

15.1. Department structure and funding situation: These units operate independently of each other, but were presented together and will therefore be evaluated together. The department of Clinical Chemistry has one professor I, one professor II and one PhD student who will graduate this year. It seems to operate as a “core facility” for interested clinicians. Its economy seems to be largely based on charging for analytical procedures. It also includes a Clinical Pharmacology unit profiled towards pharmacokinetics and, more importantly, pharmacogenomics. They have funding from various sources, including the RCN and pharmaceutical industry. The Department of Physical Medicine and Rehabilitation has only been established since the autumn 2001. They have one professor II and will get another one, and currently not less than eight PhD students. They have a good economy generated by charging for outpatient activities as part of their clinical duties. The geriatric unit has one professor I (vacant at the moment) and one professor II, six PhD students, three part-time postdocs and one psychologist. It has a wide range of interests in the area of stroke, dementia and quality of life. The funding seems to mainly emanate from the health care system, but they are also coordinators of an EU programme (ENABLE). The radiology unit has modern equipment, including fMRI, with good scientific collaborations. They do not seem to have any tenured academic positions and no major external funding. The pathology unit has one professor I and three professor II, of which one is vacant. They have very little external funding and suffer badly from high output demands from the clinical authorities, particularly since the incomes generated by their output is distributed to other departments.

15.2. Summary of SWOT analysis: The Department of Clinical Chemistry acknowledges excellent laboratory equipment including facilities for molecular analysis. They admit lack of focus and consider themselves consumed by various chores. They find it hard to combine demands for high clinical output with basic science ambitions. The rehabilitation unit has access to unique patient populations and has strong support from the hospital. They recognize their limited publication activity which is attributed to their short history. The geriatric unit sees their diversity as a strength and acknowledges their contacts with the Norwegian Research and Development Centre on Dementia. They have suffered badly from the unexpected death of the team leader and are concerned about the quality of their publications. They hope to establish a centre for research in the elderly. The radiology unit, finally, acknowledges their excellent laboratory facilities but notices the small number of scientifically active members of the team. The pathology unit acknowledges very large clinical materials, a uniquely high autopsy rate and one of the largest biobanks in Norway. The staggering clinical burden, however, makes them unable to reap the fruits of this unique opportunity.

15.3. Committee Evaluation:

15.3.1. Scientific output:

Clinical Chemistry:	Very good
(Clinical pharmacology)	(Fair)
Rehabilitation:	Weak
Geriatrics:	Good
Radiology:	Fair
Pathology:	Fair to good

- 15.3.2. Leadership:** The clinical chemistry unit has a very good scientific production probably based on its role of “core facility”. The leader had an “altruistic attitude” which is sympathetic but may in the long run be detrimental to their academic resource allocation. The rehabilitation unit is relatively new which makes it hard to evaluate. The leader is obviously ambitious and has skilfully managed to attract university and hospital resources (second professor II). The geriatrics unit seems to have suffered badly from the death of their leader. Recruitment of a new enthusiastic leader may be needed to gather the strength necessary for creation of a centre for research in the elderly. The radiology unit, finally, seems to have good intentions to develop an fMRI research line, but their scientific output is barely fair. The presenter was unable to pinpoint any distinct and unique scientific approach. It was our impression that this well-equipped unit needs a focused academic leader. The pathology department representative seemed overtly depressed by the staggering clinical burden. This attitude is not constructive, and if she is unable to handle the situation, a more enthusiastic and constructive leader should be recruited.
- 15.3.3. General comments:** The Clinical Chemistry Unit has a very good scientific output with unique studies on the role of monocytes in inflammation, septic chock etc. that to some extent reflects the very “benevolent” attitude of the leader towards academic collaboration. However, to do more than help other clinicians train PhD:s, this unit needs to focus and in particular develop their expertise in molecular techniques, an area sadly neglected by many clinical units. Recruitment of a young and molecularly oriented scientist who can be “coached” by the current leader would be a way to further optimise the use of the facilities of this well equipped unit. The unit, because of its interests in endotoxin research, would probably also benefit from collaborations with immunologists and microbiologists.

The Clinical Pharmacology unit has only a fair scientific output. As a separate unit it is too small and should be merged together with the other pharmacology units in the Oslo area.

The Rehabilitation unit has a good economy based on its outpatient activities, but their written material suggests also high academic ambitions in the pain area. Oslo has a substantial number of actors in this area, and the best way to secure implementation of these ambitious plans is to link up with established units (e.g. the pain group at Anaesthesiology and the Sunnaas rehabilitation Centre).

The geriatrics unit plans to focus their research on psychogeriatrics, which seems sound provided that they cooperate closely with expertise in geriatric psychiatry and dementia research. The death of the previous team leader is a severe blow to the group, and recruitment of a new leader is the single most important task for the near future.

The Radiology unit, despite four professors and two assistant professors, has only a low scientific output, with an outdated profile. The unit was quite late in getting its first MRI equipment, but now the situation seems to have improved.

More emphasis should be focused on research and the unit has in principle a good patient material and the basic facilities that are needed to conduct high quality research, especially in collaboration with other units.

The pathology unit has clear opportunities which at the moment are not exploited at all. High autopsy rates combined the idea of studying polymorphisms in autopsy-based biomaterial is interesting, with potential impact on a number of common population disorders. The current leader needs to create a more positive scientific environment or, else, a new leadership should be recruited.

16. Department of Rheumatology, Diakonhjemmet

16.1. Department structure and funding situation: This is a scientifically active department located in a small hospital in Western Oslo. It is run by a professor II with very high scientific ambitions, as reflected by having not less than seven current PhD students. They have an emerging cooperation with the Department of Rheumatology at Rikshospitalet, with some degree of specialisation. The activity is mainly financed by health care money and incomes from clinical studies.

16.2. Summary of SWOT analysis: Being in a small hospital makes cooperation between researchers and clinicians easy, with good access to patients and informal communication routes. They also acknowledge good access to DEXA and MRI. Their main concern is paucity of positions for senior researchers/postdocs.

16.3. Committee Evaluation:

16.3.1. Scientific output: Very good

16.3.2. Leadership: We got the impression of an ambitious leader aiming at high scientific standards (“best in Oslo or best internationally”). This high ambition is worthy of support.

16.3.3. General comments: This small academic unit has an impressive scientific output which seems to a large extent to be due to the unifying role of the current leader. This situation however also makes the unit vulnerable, particularly since it has very little basal scientific funding. The smooth cooperation with RH is positive, and should be developed further. Particularly, it is important that the unit gets access to expertise in basic science, otherwise they may easily be overrun in this very competitive area of research.

17. Sunnaas Rehabilitation Centre

17.1. Department structure and funding situation: This unit is small with a geographical position at some distance away from the rest of the university hospitals. The research unit is part of the clinical organisation, and is led by a relatively young and scientifically ambitious professor. They used to have RCN funding but the holder of that grant recently left the unit. Their main funding, which seems sufficient, is derived from various foundations and the health care system.

17.2. Summary of SWOT analysis: They report a positive scientific environment and reasonable financial support. On the negative side, they mention the problem of being a new specialty and having to build up science “from scratch”.

17.3. Committee Evaluation:

17.3.1. Scientific output: Fair

17.3.2. Leadership: The department leader was enthusiastic and seems to have succeeded in recruiting also MD:s to their PhD programme. The committee, however, got the impression of an unsound balance between quantity of production rather than scientific excellence.

17.3.3. General comments: This unit has a unique patient material and has found a way to combine research and clinical training. Its scientific output is, however, very modest. This may reflect its short history, but may also reflect too low quality ambitions of the current leader. To avoid isolation, it is important that this unit has scientific interactions with more specialized groups (e.g. in the stroke field), both locally and internationally. Recruitment of a second ambitious academic leader from outside may be one way to increase the quality of its scientific output. Ullevål and Sunnaas have wisely divided the focus of their main interests. While Ullevål concentrates on e.g. shoulder and back pain problems, Sunnaas is focusing on rehabilitation in complex disorders. With suitable visions, energetic leadership and intellectual investment, the unit should have a good research potential in an area with a growing impact.

18. Medical department, Aker Hospital

18.1. Department structure and funding situation: This unit has nine professors, all professor II. The research budget is minimal, allegedly 3.25 million NOK/year as compared to a total hospital budget of 1900 million NOK. The department has, nevertheless, produced nine PhD theses since 1999.

18.2. Summary of SWOT analysis: The department chose to present the Hepatology, Endocrinology and Clinical Nutrition units in more detail. The hepatology unit is one out of Norway's two major hepatology centres. It has an acceptable funding and international collaboration. Its main research interest, hemochromatosis, has a high prevalence in Norway and thus lends itself to good clinical research. They regret lack of contacts with basic research. The endocrinology unit, which specializes in osteoporosis, has a leader with long experience and good collaboration with other units working in this area. It lacks an infrastructure (technicians, research nurses) and considers itself economically vulnerable. The Clinical Nutrition unit is very small and considers itself isolated, since clinical nutrition is no specialty in Norway.

18.3. Committee Evaluation:

18.3.1. Scientific output: Fair to good.

18.3.2. Leadership: All three units had enthusiastic leaders who seem to accept small scale activity and in some cases isolation. This attitude is not constructive. The hepatology unit attacks the problem by international collaboration, but would benefit from a larger local scientific milieu, e.g. in cooperation with virology. The same applies to endocrinology who should dock on to other units interested in osteoporosis, e.g. endocrinology at Rikshospitalet. Clinical Nutrition is also much too isolated.

18.3.3. General comments: As stated under leadership, these small units are largely “one man shows” and in one case research was openly declared to be a “hobby”. All three research areas are important but the leaders seem to lack the power to modernize and increase their scientific environment. Mergers or close collaboration with other units with a similar profile are needed. Recruitment of young leaders may also be necessary.

19. Diabetic Thematic Research Area, Hormone Laboratory, Aker hospital

19.1. Department structure and funding situation: These activities were presented together and will be described together, but otherwise they are totally independent of each other. The Diabetic thematic area started 2001 after a Medical Faculty evaluation. It involves RH, Ullevål and Aker, with principal investigators from Institute of Immunology (RH), Institute of Medical Genetics (RH), Department of Pediatrics (Ullevål) and Department of Endocrinology (Aker). It is strongly dependent on the Hormone Laboratory but also on laboratory facilities in preclinical departments. When it was set up, it was not funded, but this is now changing and they are receiving an amount approaching 1 million NOK/year. They have only one full-time scientist but eight externally funded PhD:s. The Hormone Laboratory has existed since 1959 and has been a University Laboratory since 1987. It has greatly contributed to 17 doctoral thesis over the years. It has a role as accredited “reference laboratory” e.g. for doping analyses (sports medicine). It has currently no research budget but depends on charging for their analyses. It has recently received a donation from an anonymous donor which will be used to build a new research laboratory.

19.2. Summary of SWOT analysis: The Diabetic thematic area regards its patient material as unique and also values its collaboration networks highly. They are unhappy about having only part-time researchers (except for one person) and consider themselves vulnerable due to poor university support. They also regret that there is little interest in clinical diabetology in Rikshospitalet. The Hormone Laboratory acknowledges its unique methodological competence but is strongly dependent on charging for their analyses, which tends to drive them away from scientific activities.

19.3. Committee Evaluation:

19.3.1. Scientific output:

Diabetic thematic area:	Very good
Hormone Laboratory:	Not evaluated separately

19.3.2. Leadership: The bulk of research in the diabetes thematic area seems to be performed at Ullevål and Aker. The reason for the weak role of RH is not altogether clear. The leader tries hard to fulfil his high scientific ambitions, and

seems to be successful. The leader of the Hormone Research lab also gave a convincing presentation but seems too preoccupied with income-generating routine work. This laboratory has unique facilities and should have an even stronger scientific profile.

- 19.3.3. General comments:** The diabetes thematic area is still in a buildup phase, and seems underfunded. The emphasis of its activities is in the pediatric area, with interesting molecular and genetic approaches and long-term studies of diabetic complications. The degree of actual interaction with preclinical units at RH was not altogether clear, but this is an important issue to avoid pure descriptive research. The thematic areas will apparently be reconsidered at certain time intervals, and this group needs to identify focus areas for development in the long-term perspective.

The Hormone Laboratory has excellent opportunities for high-quality research, and should develop a strategic plan for scientific expansion in identified focus areas. This laboratory, with its new expansion, seems to be an important asset for endocrinology research in Norway.

20. Surgical department, Aker Hospital

- 20.1. Department structure and funding situation:** The surgical unit has activities in gastroenterology, vascular surgery, orthopedics and circulatory physiology. The department of surgical gastroenterology and the department of vascular diagnosis and research were presented in more detail. The vascular diagnosis unit has one professor II (a trained physiologist) and two 50 % researchers (physiologists). They collaborate closely with the vascular surgery unit. They have five ongoing PhD projects but little or no external funding.

The surgical gastroenterology unit nominally has one professor (II), a position that at the moment is vacant. They publish 3-4 papers yearly in international journals. They have currently three PhD students. Their funding seems to mainly emanate from the hospital and the pharmaceutical industry.

- 20.2. Summary of SWOT analysis:** The Department of Vascular Diagnosis and Research has a long experience in its field and considers itself strong in the area of human peripheral circulatory physiology. They are also satisfied with their external networks. The main weakness is lack of university positions (research fellowships) and paucity/lack of research grants. The surgical gastroenterology unit regards its activities in cancer research as its main strength, and also reports a good local scientific atmosphere. They have very little funding. They have noticed an interest for research among surgical trainees, but have not been able to attract support from the hospital authorities.

20.3. Committee Evaluation:

20.3.1. Scientific output:

Department of Vascular Diagnosis and Research:	Good
Surgery:	Weak

20.3.2. Leadership: The Department of vascular diagnosis and research is led by an enthusiastic physiologist. The leader is obviously competent and, given reasonable technical resources, he should be able to further improve the research. The surgical gastroenterology unit has a barely visible scientific activity and lacks a current leader. This seems to be a common feature of several surgical research units in the Oslo area, and needs to be rectified.

20.3.3. General comments: The Department of vascular diagnosis and research is using classical physiological techniques which in other countries (e.g. Sweden), are handled by clinical physiology departments. They seem to lack technical support, which means that the scientific leader spends most of his time solving various minor technical problems. This can be more efficiently done by technical staff. This unit, with a somewhat old-fashioned but nevertheless sound scientific activity, should try to get sufficient external support to develop an infrastructure enabling them to live up to their potential.

The surgical gastroenterology unit has a very low scientific activity. The reason for the vacant professor II position was not clear from the hearing. It was claimed that there is an interest for research among trainees, and, if this is correct, they should identify at least one area where they can become competitive. Surgical research in Norway seems generally weak, a problem that needs to be given specific attention.

21. Urology, Aker Hospital

21.1. Department structure and funding situation: Clinical urology in the Oslo area has recently merged and is now the largest in Norway. Urology is also given high priority by the Hospital. It has two professors, three senior scientists/postdocs, one research fellow and one bioengineer. It is a very young department in a build-up phase. It has recently obtained a major donation which will be used to build a new institute, the Urological Research Institute. Their current funding (apart from the donation) emanates to a large extent from the pharmaceutical industry.

21.2. Summary of SWOT analysis: Their main strength is considered to be a large patient population and good collaboration with the Hormone Laboratory. Their main weakness is being in a build-up phase with limited external research funding and a small “critical mass” of researchers.

21.3. Committee Evaluation:

21.3.1. Scientific output:

Urology: Fair to good

21.3.2. Leadership: The leader of this new department has very high scientific goals and is obviously determined to implement these goals. He has clearly recognized the importance of molecular biology in medicine, and is building up a competence in this area. He made an impressive presentation at the hearing and presented convincing strategic plans.

21.3.3. General comments: This unit is clearly aiming at scientific excellence, albeit fully realizing the obstacles on the way. Until now the scientific output has been rather low. However, they have a sound methodological strategy and have identified important research areas (e.g. prostate cancer) and collaboration partners. They also have a unique opportunity with the new Research Centre Building. A problem seems to be the running costs of this activity, which will probably initially have to be covered by public support in view of the modest current publication activity of the unit. It is clearly in the interest of the University and other external funding bodies to support this project. It is another example of “creative thinking” where an individual with high ambitions and clear sight has been able to create something thoroughly new and important. Like all early projects, it is vulnerable at the moment and should be given advisory support from more established groups which have already been through a similar process.

University of Tromsø

University of Tromsø – Faculty of Medicine

FoM has undergone a major expansion during the 1990's, as evident from the increasing number of senior scientists. It is currently organized in a few large institutes including several departments and sections. Recently, a decision was made to establish a faculty of Dentistry at the University of Tromsø. Work is currently underway to establish a complete research strategy document for the FoM.

General strategic comments:

Tromsø University is the northernmost one in the world. This unique location generates some special strategic issues. The university has quite extensive teaching obligations despite its moderate size, which makes it necessary to maintain the full clinical range of academic competence. Along the same lines, it has recently been decided to build up a new dental school in Tromsø. The uptake population of the university hospital is only about 500 000 persons, and in rural areas the population is actually decreasing. There is a net movement of academics to other universities, but there is also a large proportion of the academics who settle and remain settled during their entire academic career. To minimize adverse effects of isolation, the university encourages international exchange by having favourable conditions for sabbaticals. Tromsø's situation is, however, not unique in northern Scandinavia and we noted that there is relatively little cooperation with universities in northern Sweden and Finland. Such a cooperation network ("Northern Scandinavia University Network"), with exchange of academics as well as students, would be one way to enlarge the local academic environment without a net loss of academic competence.

1. Institute of Clinical Medicine

1.1. Department structure and funding situation: This institute contains not less than 19 scientific departments, with a very wide range of seemingly independent scientific activities. They have 14 tenured professors (professor I), eight of whom are 60 years or older. There is also a relatively large number of part-time academics (professor II/associate professors), with their main activity in clinical work. During the hearing, it became clear that the time balance between research, teaching and clinical work is negotiable at the individual level, a construction that is regarded as an advantage e.g. in recruitment situations. The other side of this construction is, however, that the amount of research time allotted is not always defined, which may lead to unreasonable clinical burdens also for scientifically active tenured professors. In view of the relatively large senior academic staff, the output of doctorates is moderate, approximately 4-8/year for the whole Institute. The backbone of the external funding is RCN grants to the departments of Anesthesiology, Pediatrics, Surgery, Oncology and Internal medicine, but we note that the amount of RCN funding has decreased substantially during the last years. Other external grants emanate from the Cancer Foundation, EU and local research support from various sources.

1.2. Summary of SWOT analysis: As expected, the SWOT analysis differs markedly between individual departments, which is also stated in the report. The surgical unit is e.g. very positive regarding the recruitment situation, a situation that is attributed to

consistent integration of clinical training and research in combination with a well-equipped Surgical Research Lab. Most of the other units elaborate on structural problems related to the Norwegian academic system. The main strength is considered to be a good atmosphere of cooperation on a small campus, and the main weakness fragmentation of research and heavy clinical and teaching duties. The SWOT analysis also identifies a risk for deterioration of scientific output and quality of training due to “increased clinical service loads from administrative leaders of the hospital”. It is also noted that virtually all of the budget is bound up by salaries, which gives very little room for investments in new equipment, core facilities and running expenses.

1.3. Committee Evaluation:

1.3.1. Scientific output: Fair to very good

1.3.2. Leadership: The Institute seems to be only an organisational label for a large number of groups working independently of each other, suggesting problems with leadership. The fragmentation problem is clearly recognized in the SWOT analysis, but no defined strategic plan was presented to solve this problem. Another obvious issue, the age profile of the senior academics, was also noted without any accompanying plans to deal with this very serious issue. This situation can also be regarded as an opportunity to renew and modernize the academic profile of the Institute. We got the impression of a relatively more stringent leadership at the department level e.g. in surgical sciences and oncology. It was the impression of the committee that this Institute has a strong need for a focused research strategy and a dedicated academic leader capable of understanding both the clinical needs of the group as well as the future delineations necessary for generating a “real” institute. External recruitment to this position would be highly favourable.

1.3.3. General comments: It was the impression of the committee that the research was too fragmented and would benefit from concentration and focusing. We had an in depth presentation of a majority of the underlying departments. A common feature seen in most presentations was the need to modernize research methodology and create core facilities for e.g. translational research. The Department of Medical Genetics may play a pivotal role in this process. Despite its very small size, this unit has a very good publication output and is well integrated with modern research techniques. We did, however, note that at least one key person behind these publications has recently moved to another university. The Department of Surgery (including cardiothoracic surgery) has a good and to some degree very good scientific production which is based on a modern laboratory for large animal studies. This facility is also used by the Anaesthesiology department which has a good scientific production but major problems to recruit Norwegian PhD students. It is the impression of the committee that Tromsø is strong in integrative physiology and clinically relevant large animal models. This line of research needs to be boosted by application of modern molecular techniques to these preparations. Overall a melding of current strengths with 21st century technology is necessary. Young active investigators need to be recruited to participate in the research programs at an early stage. This would strengthen continuity and improve the quality of research.

The oncology and pediatric units have a good scientific production, but seem somewhat unwilling to take the necessary steps to further sharpen their methodological arsenal. In the case of the oncology unit, the difficulties were attributed to lack of local support, which is not acceptable. Resources to set up collaborations between basic sciences and the clinic are needed. Also, possibilities should be provided to allow transfer of know-how from sabbaticals and international collaborations. Likewise, the pediatrics unit, which also has a good scientific production, needs to apply molecular genetic techniques to their unique pediatric patient materials. Internal Medicine, finally, has seemingly secured a very favourable contract with a commercial partner, which should create a unique opportunity to help this unit (with a good but qualitatively modest scientific production) to become internationally competitive in atherosclerosis research. The precise nature of this relationship requires some further definition and it should be carefully monitored to ensure that the mission statement of the department is not encompassed. We also encourage that they make optimal use of the biobanks generated by the Tromsø study material in this process. Core facilities for the clinical bed-side research also need to be improved.

In summary, it was the impression of the committee that the Institute of Clinical Medicine is potentially threatened by the very obvious retirement problem resulting from an unsound recruitment policy. There are, however, several units with a very good potential to become internationally competitive. With good academic and scientific leadership, reallocation of resources to successful groups with good future prospects, and creation of core facilities for modern translational research, this Institute should be able to meet the challenges of the postgenomic era. To alleviate recruitment problems, more incentives should be provided for young researchers (salary, appreciation of academic achievements in the clinic and positive feed-back for scientific productivity).

The newness and the lack of a long entrenched history in the Tromsø institution lends itself to the introduction of novel methods for addressing the clinical and scientific interests of the Norwegian Health Care system. A critical issue is the recruitment of a vibrant and exciting leader and the provision of adequate resources to facilitate the acquisition of bright enthusiastic young faculty predominantly from external sources. In general, it is the scientific environment, rather than the geographic location, that determines the attractiveness of the Institute for scientists. A mission statement for the institution should be generated to help define the goals for the future and a short-term, intermediate- and long-term plan developed.

University of Trondheim

NTNU – Faculty of Medicine

FoM has established its goals and strategies emphasizing medical technology in imaging techniques, medical biotechnology, functional genomic research, bioinformatics and technological assessment. Translational research is also emphasized as a priority. The two major strategic research areas are Medical Technology and the North Trondelag Health Study (HUNT).

FoM has, like in the other Norwegian universities, undergone restructuring with the formation of a few, large departments. At present, FoM consists of five departments integrating basic and clinical sciences.

NTNU has a close collaboration with SINTEF, an independent research organization consisting of eight research institutes with 1700 employees and an annual budget of 1700 million NOK. This income is generated from contracts with the industry and the public sector. Industrial collaborations with FoM are, at least in part, channelled through SINTEF.

General strategic comments:

It is the opinion of the Committee that the Faculty of Medicine in Trondheim is currently in a positive situation to improve and develop medical research. Factors promoting this development are a new hospital, apparently well-working cooperation with the health care system, constructive discussions with the hospital regarding research strategies and the recently decided integration between basic and clinical research. Translating these unique opportunities into concrete scientific activities will demand very competent scientific and administrative leadership. It is, therefore, somewhat surprising to the Committee that the basis of selecting the leaders is an intra-departmental vote rather than stringent selection criteria based on leadership capability.

1. Department of Laboratory Medicine and Children's and Women's health

1.1. Department structure and funding situation: The department (DLCW) consists of four major units; paediatrics, gynaecology-obstetrics, morphology and laboratory medicine. Laboratory medicine, in turn, consists of five units: microbiology, clinical chemistry, pharmacology, human genetics and immunology. DLCW is the result of a radical restructuring of the faculty that has been enforced only since September 2002. DLCW has 17 category 1 academic positions, 22 category 2 positions (20 %), and about 20 PhD students, most of whom are financed through the hospital. During the interview, the department head reported lack of NRC funding and it became clear that the department relies heavily on funding from the health care system and activity based on PhD training.

1.2. Summary of SWOT analysis: The major strength was considered to be the close relation to the hospital, in particular the new hospital building with its modern equipment. Another important asset was considered to be access to biobanks generated by the HUNT project as well as from patients participating in prospective clinical trials. A major problem was considered to be a vulnerable academic structure with many senior academics and relatively few intermediate positions.

1.3. Committee Evaluation:

1.3.1. Scientific output: Fair to very good

1.3.2. Leadership: The head of the department presented a strong and committed approach to change and appeared well aware of strengths and weaknesses. It was the committee's impression that he needs time to present a strategic plan which truly aims at attracting external grants and at developing a quality-driven research school. The problem of a vulnerable age-structure was clearly recognized, but no constructive strategy to deal with this key issue was presented at the hearing.

1.3.3. General comments: It is the opinion of the Committee that the department relies too heavily on PhD training. The generally formulated wish to "participate in the HUNT project" needs to be given concrete form. There is a strong need for focusing and recruitment of new scientists to senior faculty positions, preferably with candidates having a background in molecular genetics and/or epidemiology. The degree of international cooperation is good in Fetal Medicine and Human Genetics, but needs to be improved in the other units of the department. Generally, the department needs to develop a strategy for international interface and exposure. Some units, e.g. Fetal Medicine, which can be rated as very good, is built entirely around a few key individuals, which makes it highly vulnerable. This particular unit seems to have a very strong position in clinical ultrasound research, but to maintain this position it needs to recruit new young, clinical scientists and would probably also benefit from technical cooperation with other ultrasound-oriented units within the NTNU.

2. Institute of Cancer and Molecular Medicine

2.1. Department structure and funding situation: The Institute was created as a result of restructuring of the faculty as of September 1st 2002. It consists of 8 units, 13 full-time professors, 4 associate professors, 17 professors 2 (20 %), not less than 18 postdoc fellows, 37 PhD students and technical staff, and has a total budget of 68 million NOK. The Institute seems to have a substantial external funding (25 million NOK), i.e. about a third of the total budget. Approximately 50 % of the PhD's and postdocs have a medical background. The Institute consists of nine research units with varying degrees of mutual contacts. During the hearing, we got an in-depth presentation of four of the units and some information on the Unit of Applied Clinical Research.

2.2. Summary of SWOT analysis: This analysis was not done at the institute level, as intended, but at the unit level. It was, therefore, available only for the most scientifically active sections. The GI unit has a positive outlook, with good recruitment of PhD's, including those with a medical background. Access to equipment is not considered to be a problem. The unit seems to be steering in the direction of general oncology. The diabetes research unit is small and headed by a professor with an adjunct position at the Karolinska Institute. It has been difficult to recruit PhD's. The close co-operation with Stockholm is considered to be a major strength and the main weakness general shortage of funding. The unit of Hematology considers itself highly successful, and has no major concerns for the future. They wish to further increase their international collaboration.

The group on opioids, symptom management and palliation research is also generally very positive in their SWOT analysis. Their major concern is the financing of expensive equipment necessary for their planned expansion. The remaining units have not presented sufficient material to allow a meaningful SWOT analysis.

2.3. Committee Evaluation:

2.3.1. Scientific output: Fair to excellent

2.3.2. Leadership: It is our impression that the competence of the leadership of the Institute is high or very high, with a realistic and far-sighted strategic plan for the future development of the institute. We also note that the current leader has encouraged international cooperation, which is very positive for the institute.

2.3.3. General comments: The myeloma group and the opioid research group have an excellent scientific output and presented well-structured strategic plans for the future. Within their fields, they can be considered to be highly internationally competitive. A particular strength of the opioid research group is their focus on the pharmacogenetics of opioid therapy. The plans of the myeloma group to give high priority to translational research in the field of growth factors is a challenge that will demand new competence and methodology. The institute will within a few years move into new hospital facilities, an opportunity that needs to be fully exploited, most notably regarding equipment necessary for the molecular genetics strategy. The small diabetes group has limited expansion potential but a very good scientific production. If this activity is to be pursued, there is a strong need for recruitment to enlarge the scientific environment and secure continuity. The GI group has a good scientific output but seems isolated. It is currently moving in the direction of general oncology rather than focusing on GI issues. It is the opinion of the Committee that the unit would benefit from more cooperation with other GI groups, both internally and externally. One way to accomplish this would be to create a Center for Digestive Diseases. We also note that the Institute for Circulation and Medical imaging has a very high competence in medical technology that might be used to enlarge the technical platform of the GI unit. The prospect of an entirely new building also raises the possibility of trying to build up an “Operating room of the future” with a GI profile. This opportunity, if marketed correctly, should make it possible to recruit new clinical scientists to the unit, provided that the current leaders are willing to take on this challenge. The need to establish a multidisciplinary digestive disease group is a crucial task for the institution to again become internationally competitive.

The research of the remaining units (Oncology, GI surgery, Kidney diseases and Occupational Medicine) seems highly fragmented (fair to good) and they will need support from the more successful units of the institute to improve their scientific output. They also need to recruit highly qualified clinical scientists who can take the responsibility for the future development of clinical research. In this context, the Unit of Applied Clinical Research has a potentially important role. The creation of an external advisory group to help support this transition into 21st century medicine might not only help with the

restructuring but would also provide a valuable international interface for the GI/oncology/ radiology/surgery groups.

3. Department of Circulation and Medical Imaging

3.1. Department structure and funding situation: The institute consists of eight main units. Most of these have a cardiovascular profile (ultrasound research, MR research, vascular surgery, cardiothoracic surgery, exercise unit and to some extent the epidemiology unit), but there are also two units of different character (part of Opioid research unit, and the Extreme Environments unit). The staff consists of 16 professors/associate professors, and 9 part-time professors (professor II). 26 PhD students are registered, about 50 % of whom have a medical background. In addition, 15 PhD students with an engineering background are trained by the Institute. The Institute has had a deliberate strategy to actively cooperate with the Engineering School of NTNU, which is regarded as one of their main assets. They have been successful in obtaining external funding, both through the RCN and to some extent by exploiting the commercial potential of their technical research profile. Three spin-off companies have been established on the basis of their technical innovations, one of which is now part of a major American corporation.

3.2. Summary of SWOT analysis: The description of the Institute is clear and well written. Their main strength is considered to be their high degree of integration of scientific competences, including technological expertise. Their main weakness is considered to be heavy clinical duties of the research staff, and to some extent poor funding. They also complain of a heavy teaching load.

3.3. Committee Evaluation:

3.3.1. Scientific output: Good to excellent

3.3.2. Leadership: The committee got the impression of a sound leadership which, however, seems to give higher priority to technical projects than to their application in clinical cardiology research. This approach has obviously been successful so far, but may become a problem in the long run. A scientific research Committee with broad competence may be one way to deal with this problem. The close cooperation with the Engineering School is a key to the success of the Institute, and the fact that this interaction works seemingly without friction is impressive, again suggesting competent leadership.

The teaching profile of the institute, in the interface between engineering and medicine, has attracted a great number of students and strengthened the cooperation with the Engineering School. This effort, combined with the positive attitude of the Institute to media contacts should, therefore, be regarded as a strength rather than a weakness.

3.3.3. General comments: This is a highly successful unit with a strong technological profile. It has built up unique contact surfaces with the Civil Engineering School, resulting in common PhD students and excellent application of technical competence to important biological problems, mainly in cardiology. The technological research is considered to be highly

innovative, but this is not quite reflected by the impact score of their publications. Instead, other centers (Leuven, Mayo clinic) have the key publications resulting from the Institute's innovative ideas. There are probably at least three reasons for this phenomenon: (1) the highly technical nature of the basic observations which make them hard to publish in more general (and high impact) journals; (2) delay of publication due to patent restrictions; (3) lack of strategy and/or competence or resources for carrying a project all the way from idea to clinical application.

The Institute seems willing to try to correct this structural problem and, to do this, needs to fill in the current gaps with new competence, preferably by external recruitment. The current PhD programme seems too large, with no less than 41 PhD students to supervise by an academic staff of about a dozen seniors, many of whom have heavy clinical duties. It is the opinion of the Committee that resources should be allocated to positions at the intermediate level, i.e. postdocs and research fellows. If the Institute decides to develop an algorithm that will make it possible to develop an idea all the way to clinical application, a corollary is that they will have to recruit people with new competence e.g. in integrative animal physiology (proof of concept in animals) as well as experts in clinical cardiovascular research. To finance this, redistribution of current resources will probably not suffice. One way to increase funding would be to more optimally exploit the obvious commercial values in the profile of the Institute. As we understand it, commercial exploitation of university ideas is now encouraged in Norway, and this Institute has a research profile and track record which should make it possible to attract e.g. venture capital and regional development capital. This approach should, of course, be planned and pursued in close contact with the University.

We also note that the imaging unit has a very good potential as a "resource center" for the whole NTNU, and attempts should be made to form crosslinks with e.g. opioid research (functional MRI). Links with biological research will also need to be strengthened for the department to exploit the molecular approach of high field strength MR systems. Like most other groups, the Institute plans to use the HUNT material, but there are no concrete plans for this strategy. To make this realistic, they will need to recruit expertise in cardiologic epidemiology. The Institute seems to have a good international cooperation strategy with e.g. several visiting professors and extensive international interaction.

The department contains a unit for exercise physiology that has been formed very recently. From the available material the Committee got the impression of a very good quality of its scientific production. It has a good potential, not least if it can make use of the high technological competence within the Institute.

On balance, it is our impression that the Institute needs to define its goals and that a short- and long-term strategy document would aid in providing such focus and balance.

4. Department of Neuroscience and Motion

4.1. Department structure and funding situation: The Department originates from three former Departments: Psychiatry, Clinical Neurosciences, and Orthopedics & Rheumatology. The Psychiatry unit is not the subject of the present evaluation and will not be commented on. The remaining units are Clinical Neurosciences, Orthopedics & Rheumatology and Ear-Nose-Throat & Ophthalmology. The profile of the Clinical Neuroscience Department is mainly pain research with emphasis on headache and, to some extent, back- and musculoskeletal pain. The main profile of the Orthopedic unit is biomaterial research. Most of the full academic positions (professor I) are linked to the Clinical Neuroscience unit. Ophthalmology and Rheumatology also have one position each. The remaining positions are part time (professor II). The Department reports 17 PhD students, 13 of whom are stated to be externally financed. The Department reports 1.3 million NOK in NRC money and 1.5 million NOK from other external sources. The financial details were given in such a way that the committee requested a revised version of the fact sheet, which was also provided.

4.2. Summary of SWOT analysis: In the self-report, which is not very detailed, the Department admits limited communication between the different units and expresses concerns regarding poor administrative support. The Strategy section of the self-evaluation is not very informative, since it applies to NTNU as a whole, rather than to the Department itself.

4.3. Committee Evaluation:

4.3.1. Scientific output: Fair to very good

4.3.2. Leadership: The Department was presented in a manner that made it hard, or even impossible, for the panel to clarify the many issues raised by the incompletely written material, suggesting problems with leadership. This needs to be rectified.

4.3.3. General comments: The units of the Department differ very markedly in their scientific activity. The section working on headache has a very good scientific production and is competitive from an international point of view. This original research area should have sufficient support to be able to adequately develop its uniqueness. The orthopedic and ophthalmology units were not presented during the hearing, but the written material suggested only a fair scientific production. The scientific strength of the Department thus seems to reside mainly within the Clinical Neuroscience and Neurobiology units. The strategic plans for the units are sound and in some parts very interesting, including a major dementia project linked to the HUNT material based on an interesting approach to study the molecular biology of the disease. However, the unit needs more competence in epidemiological research and molecular genetics to successfully pursue these ideas. The unit also plans to include functional MRI studies, a recognized area of strength at the NTNU. We recommend that this project be run in close co-operation with the successful Medical Imaging Unit. With optimal leadership and successful recruitment of

additional competence to the group, e.g. in epidemiology and molecular genetics, it has good chances to remain internationally competitive.

This unit would benefit from an international advisory panel to provide support and guidance in terms of reconfiguration and focus. This would also provide a further basis for the establishment of external contacts and interfaces.

APPENDIX 1 – Letter to the Institutions 1

Fagevaluering av forskning innenfor de kliniske fagene, de samfunnsmedisinske fagene, helsefagene og psykologi – informasjonsmøte

Områdestyret for Medisin og helse (MH) har besluttet å følge opp evalueringen av grunnleggende biofaglig forskning (2000) med evaluering av forskningen innenfor de øvrige fagområdene som MH har ansvar for, dvs. kliniske fag, samfunnsmedisinske fag, helsefag og psykologi. Det vil bli lagt stor vekt på å få til en god prosess hvor dialog med forskningsmiljøene skal stå sentralt. Vi vil derfor avholde et **informasjonsmøte torsdag 12. desember 2002** og vi ber dere om å holde av denne dagen

Bakgrunn og hensikt

Evalueringen vil omfatte forskning ved universitetene, universitetssykehusene og –klinikene samt sentrale forskningsinstitutter utenfor universitetssektoren. Enheter og forskergrupper som ble evaluert i biofagevalueringen skal naturligvis ikke evalueres på nytt.

Hensikten med evalueringen er å:

- Styrke grunnlaget for forskningspolitiske råd til regjeringen og berørte departementer.
- Bedre plattformen for forskningsstrategiske beslutninger både i Forskningsrådet og i forskningsmiljøene selv.
- Få råd om tiltak som kan gi økt kvalitet og effektivitet innen klinisk-, samfunnsmedisinsk-, helsefaglig- og psykologisk forskning.

Se vedlagte utkast til mandat for evalueringen.

Forslag til panelmedlemmer

Evalueringen vil bli gjennomført ved hjelp av tre evalueringspanel:

Panel 1: Klinisk forskning (klinisk medisin, klinisk odontologi, klinisk farmasi/farmakologi)

Panel 2: Samfunnsmedisinsk- og helsefaglig forskning (samfunnsmedisin, epidemiologi, atferdsforskning, helsetjenesteforskning, etikk, helserelatert samfunnsforskning)

Panel 3: Psykologi og psykiatri (klinisk psykologi, klinisk psykiatri og basal psykologi)

Panelene vil bli satt sammen av internasjonalt anerkjente fageksperter som til sammen har kompetanse innen de ulike delene av de tre fagområdene.

Dere inviteres med dette til å foreslå fageksperter til panelene. **Forslagene sendes rådgiver Berit Nygaard raskest mulig og senest innen 29. november 2002.** Ekspertene må være internasjonalt anerkjente forskere, både kvinner og menn, som er habile i forhold til de norske fagmiljøene. Forslaget til eksperter må inneholde navn, adresse og en kort beskrivelse av aktuelt forskningsområde/er. Det er en fordel med kandidater som dekker flere kompetanseområder. Presiser gjerne om noen av de foreslåtte også er egnet til å lede det aktuelle panelet.

Plan for evalueringen - Egenvurderinger fra instituttene

Panelene vil basere sine vurderinger og anbefalinger på egenvurderinger fra instituttene, på CVer og publikasjonslister for de vitenskapelig ansatte og på møter (intervjuer) med representanter fra fagmiljøene.

Egenvurderingene utgjør viktig grunnleggende informasjon for fagekspertene. Høy kvalitet på dette materialet, inklusive CVer og publikasjonslister fra det vitenskapelige personalet, vil

derfor ha stor betydning for evalueringens samlede kvalitet. Evalueringen er avgrenset til å omfatte følgende vitenskaplige stillinger: professor I, 1.amanuensis, postdok. og professor II. Brev med nærmere orientering om egenvurderingen og beskrivelse av hva den skal inneholde av informasjon, vil bli sendt miljøene i slutten av november. Frist for innsendelse av egenvurderingene vil etter planen bli siste halvdel av februar 2003.

Ekspertenes møter med fagmiljøene (høringer) vil finne sted våren/forsommeren 2003. Evalueringen avsluttes med rapporter fra panelene som forventes å foreligge innen utgangen av 2003. I tillegg har vi diskutert om det også vil være nyttig å få utarbeidet en overordnet rapport hvor det settes fokus på felles vurderinger og anbefalinger for hele området klinisk-, samfunnsmedisinsk-, helsefaglig- og psykologisk forskning.

Informasjonsmøte

Forskningsrådet inviterer til felles møte for instituttleder og andre aktuelle aktører **torsdag 12.desember kl. 1030 – 1400 på Radisson SAS Plaza Hotel i Oslo**. Hensikten med møtet er å informere om evalueringen og å drøfte aktuelle spørsmål med instituttene. Invitasjon til møtet med angivelse av maksimalt antall deltakere, vil bli sendt i løpet av uke 48.

Kontaktpersoner

Spørsmål i tilknytning til evalueringen kan rettes til:

- Rådgiver Berit Nygaard (kliniske fag), Området for medisin og helse, telf. 22037174, e-post: bn@forskningsradet.no
- Rådgiver Arthur Aamodt (samfunnsmedisin/helsetjeneste), Området for medisin og helse, telf. 22037084, e-post: aam@forskningsradet.no
- Prosjektleder Malena Bakkevold, telf. 64972872/95750533, e-post: post@ malena.no

Med vennlig hilsen
Norges forskningsråd

Hans M Borchgrevink
Direktør
Medisin og helse

Gro E M Helgesen
Avdelingssjef
Medisin og helse

Vedlegg:

- Utkast til mandat for evalueringen
- Adresseliste

APPENDIX 2 – Terms of reference

Evaluation of clinical, epidemiological, public health, health-related and psychological research in Norway

Terms of reference

I Introduction

The Division of Medicine and Health at the Research Council of Norway has decided to evaluate research activities in clinical, epidemiological, public health, health-related and psychological research in Norwegian universities, university hospitals and relevant research institutes. The reports of the evaluation panels, including an overall summary, will form the basis for the future strategy of the Research Council in this area.

The objective of the evaluation

The objective of this evaluation is to review the overall state of clinical, epidemiological, public health, health-related and psychological research in Norwegian universities, university hospitals and relevant research institutes.

Specifically, the evaluation process will:

- Offer a critical review of the strengths and weaknesses of the above fields, both nationally and at the level of individual research groups and academic departments. The scientific quality of the research will be reviewed in an international context.
- Identify departments which have achieved a high international level in their research, or which have the potential to reach such a level.
- Identify areas of research that need to be strengthened in order to ensure that Norway in the future possesses necessary competence in areas of national importance. A key aspect is to enable the Research Council of Norway to assess the situation regarding recruitment in the above scientific fields.

Further, the evaluation aims to:

- provide the institutions concerned with the knowledge required to raise their own research standards
- provide the institutions concerned with feedback regarding the scientific performance of individual departments, as well as suggestions for improvements and priorities
- improve the knowledge base for strategic decision-making by the Research Council
- function as a platform for future work on developing clinical, epidemiological, public health, health-related and psychological research
- represent a basis for determining future priorities, including funding priorities, within and between areas of research.

More generally, the evaluation is designed to reinforce the role of the Research Council as advisor to the Norwegian Government and relevant ministries.

Organisation

Evaluation panels will be established for each of the following subfields:

- Clinical research (clinical medicine, clinical odontology, clinical pharmacology)
- Public health and health services research (public health, epidemiology, psychology, behavioural research, health services research, ethics, health related social science etc.)
- Psychiatry and psychology (clinical psychology, basic psychology)

II Mandate for the evaluation panels

The panels are requested to make use of the self-assessments provided by the institutions in the evaluation of the overall state of clinical, epidemiological, public health, health-related and psychological research. The panels are requested to write a report with a set of specific recommendations for the future development of the field, including means of improvement when required. The panels are requested to evaluate scientific activities with respect to their quality, relevance and international and national collaboration, bearing in mind the resources available. The panels are further requested to evaluate the way in which clinical research, epidemiology, public health research and health services research and psychology are organised and managed.

The conclusions of the panels should lead to a set of recommendations concerning the future development of clinical, epidemiological, public health, health-related and psychological research in Norway.

1. Scientific quality and relevance

Specific aspects to be considered:

- International position of Norwegian clinical, epidemiological, public health, health-related and psychological research.
- Quality of the departments and appropriateness of their funding.
- Strong and weak areas.
- Relevance of the research.
 - Which fields of research have a strong scientific position in Norway and which have a weak position?
 - Is Norwegian clinical, epidemiological, public health, health-related and psychological research ahead of scientific developments internationally within specific areas?
 - Are the results currently being produced, e.g. number of fellowships awarded and articles published, reasonable in terms of the resources available?
 - Is there a reasonable balance between the various fields of Norwegian clinical, epidemiological, public health, health-related and psychological research?
 - Are research areas absent, over- or underrepresented in any particular field?
 - Is Norwegian clinical, epidemiological, public health, health-related and psychological research being carried out in fields that are regarded as
 - particularly relevant by the international research community?
 - relevant to the needs of the Norwegian society ?
 - relevant to the needs of the (Norwegian) health sector ?
 - relevant to the needs of Norwegian industry?

2. The institutional situation with regard to:

- **Organisation, academic career structure, scientific leadership, gender and age**
 - Are the academic departments adequately organised and is the size and organisation of the research groups reasonable?
 - Is scientific leadership being exercised in an appropriate way?
 - Do the departments have strategies with specific plans for their research, and are such plans being followed up?
 - How is the career path for young researchers?
 - Does the department face a depletion problem?
 - How is the balance between men and women in academic positions?
- **Graduate and postdoctoral contacts, training and mobility**
 - How are graduates employed after completion of higher degrees?
 - Is recruitment to doctoral training programmes satisfactory, or should greater emphasis be put on recruitment in the future?
 - Is there a satisfactory degree of national and international mobility?
 - How ambitious/demanding is the research culture among young researchers?
- **National and international contacts and collaboration**
 - Is there a reasonable degree of co-operation and division of research activities at national level, or could these aspects be improved?
 - Is there sufficient contact and co-operation among research groups at national and international level?
 - Does the department maintain sufficient contact with the public sector and industry?
 - Is there sufficient co-operation in the use of laboratories, expensive equipment and larger data collections?
 - Do research groups take part in international programmes or use facilities abroad, or could utilisation be improved by introducing special measures?
 - What roles do Norwegian departments/research groups play in international co-operation in individual subfields of clinical, epidemiological, public health, health-related and psychological research?
 - Is there an adequate degree of national and international mobility?
 - How is the collaboration with relevant industry?

3. Financial support

Specific aspects to be considered:

- **The general financial situation for clinical, epidemiological, public health, health-related and psychological research**
- **The balance between positions, projects and equipment**
- **The review process**

4. Interchange of knowledge and technology between clinical practice and industry

5. Specific panel-related issues and questions

Clinical research (clinical medicine, clinical odontology, clinical pharmacology)

- To what extent are conditions provided for combining clinical practice and clinical research?
- How close is the contact and interaction between basic disciplinary research, epidemiology and clinical research?
- How close is the contact and interaction between public health and clinical research?

Public health and health services research (public health, epidemiology, psychology, behavioural research, health services research, ethics, health related social science)

- How close is the contact and interaction between basic disciplinary research, epidemiology and clinical research?
- How close is the contact and interaction between public health and clinical research?
- How close is the contact and interaction between research in this area and the social science research?
- How close is the contact and interaction between research in this area and the health services and other user groups?

Psychology and psychiatry (clinical psychology, clinical psychiatry, basic psychology)

- To what extent are conditions provided for combining clinical practice and clinical research?
- How close is the contact and interaction between basic disciplinary research, epidemiology and clinical research?
- How close is the contact and interaction between psychology and psychiatry research?
- How close is the contact and interaction between psychology and social science research?
- How close is the contact and interaction between psychiatry and somatic medicine?

6. Future developments and needs

7. Miscellaneous

Are there any other important aspects of Norwegian clinical, epidemiological, public health, health-related and psychological research that ought to be given consideration?

APPENDIX 3 – Letter to the Institutions 2

Fagevaluering av klinisk, epidemiologisk, samfunnsmedisinsk, helsefaglig og psykologisk forskning – Timeplan og retningslinjer for høringsmøtene

Vi viser til kontakt per brev og e-post om evalueringen og tidspunkt for høringsmøtene.

Vedlagt følger timeplan for instituttene/enhetenes møter med panel 1 for berørte enheter ved universitetet. Det enkelte institutt/enhet må selv gå inn i timeplanen og sjekke aktuelt tidspunkt for oppmøte. Høringene finner som kjent sted i uke xx, dvs. fra mandag yy. til og med torsdag/fredag zz.

For å oppnå likebehandling forutsettes det at timeplanen holdes av alle parter.

Informasjon og inntrykk fra høringsmøtene må betraktes som tilleggsinformasjon til det materialet som allerede er innsendt fra instituttene/enhetene og som utgjør hovedmaterialet for evalueringen.

Forberedelser

Hvert høringsmøte vil ha en todelt oppbygging med innledning/presentasjon fra det aktuelle instituttet/enheten og påfølgende spørsmål fra panelet.

Panelet er godt kjent med det innsendte materialet. Punkt 6 i egenvurderingen er omtale av instituttets/enhetens sterke og svake sider. Leder av panelet ønsker at presentasjonen især konsentreres om dette punktet, samt at sterke/svake sider i tillegg ses i et framtidsperspektiv. En slik analyse går under betegnelsen SWOT-analyse hvor akronymet står for "Strengths" (styrke), "Weaknesses" (svakhet) - i dag - og "Opportunities" (muligheter) og "Threats" (trusler) - i framtiden. Vi er oppmerksomme på at framtidsperspektivet har en naturlig kobling til både nåtid og fortid. Hvilke forskningsincitament er viktige? Gjør framstillingen så konkret og oversiktlig som mulig – **og husk at den skal være på engelsk.**

Forholdet mellom innledning og høring skal være i størrelsesorden 20 – 80. Konkret betyr dette at dersom et institutt/enhet står oppført med 1,5 time i timeplanen så skal innledningen (SWOT-analysen) utgjøre maksimalt 18 minutter av møtet. For å sikre tilstrekkelig tid til spørsmålstilling forbeholder panelet seg retten til å avbryte innledeerne dersom de går ut over den skisserte tidsrammen.

Vi anbefaler at innledeerne benytter lysark slik at informasjonen kommer tydelig fram. Ta med 10 kopier av presentasjonen (**på engelsk**) slik at denne er tilgjengelig for panelet i det videre arbeidet.

Deltakelse

Det er nødvendig å begrense antallet deltakere under høringsmøtene. Maksimalt antall deltakere fra deres institutt/enhet er satt til x personer. Forskningsrådet dekker reiseutgifter (ikke kost og overnatting) for inntil y deltakere. Høringsmøtene for de største instituttene/enhetene vil gå over flere timer. Instituttet/enheten bestemmer selv om deres representanter skal delta under hele høringsmøtet eller om de skal komme til ulike tidspunkt.

Vi ber om at liste over instituttets/enhetens representanter med navn og tittel sendes Berit Nygaard per e-post innen zz ccc, se adresse nedenfor.

Praktiske forhold

Alle intervjuer finner sted på Radisson SAS Scandinavia Hotel, Holbergsgate 30, 0166 Oslo, tlf 23 29 35 53, som ligger nær Nationalteateret stasjon (fly-tog og T-bane).

Generelle spørsmål i tilknytning til høringsmøtene rettes til:

- Rådgiver, Berit Nygaard, tlf 22037174, e-post: bn@forskningsradet.no
- Prosjektleder Malena Bakkevold, tlf 64 97 28 72, mobil 95 75 05 33, e-post: post@malena.no

Praktiske spørsmål rettes til:

- Prosjektsekretær Vibeke Natalie Torp, tlf 22 03 74 98, e-post: ynt@forskningsradet.no

Panel 1 ser sammen med Forskningsrådet fram til en viktig og hektisk uke og takker for arbeidet som blir lagt ned i denne forbindelse fra instituttenes/enhetenes side.

Med vennlig hilsen
Norges forskningsråd

Gro E M Helgesen
Avdelingssjef
Medisin og helse

Berit Nygaard
rådgiver
Medisin og helse

Kopi er sendt: Fakultetsledelsen

Vedlegg : Timeplan for panel 1

APPENDIX 4 – Time schedule week 1**Review of research in Clinical Medicine Time
schedule for Panel 1**

Date	Time	Institution/department
Mon		Norwegian University of Science and Technology, Trondheim (NTNU)
		Faculty of Medicine
2 June	09.00 – 09.30	<i>Panels half hour</i>
	09:30 – 09:45	NTNU, Faculty of Medicine – introductory comments
	09.45 –	Department of Laboratory Medicine, Childrens and Womens Health
	11.00 – 11.15	<i>Break</i>
	– 12.30	<i>Continuing</i> Department of Laboratory Medicine, Childrens and Womens Health
	12.30 – 13.30	<i>Lunch</i>
	13.30 –	Cancer Research and Molecular Medicine
	14:15 – 14.30	<i>Break</i>
	– 17.15	<i>Continuing</i> Cancer Research and Molecular Medicine

Date	Time	Institution/department
Tue		Norwegian University of Science and Technology, Trondheim (NTNU)
3 June		Faculty of Medicine
	0900 -	Department of Circulation and Medical Imaging
	10.00 - 10.15	<i>Break</i>
	- 11.45	<i>Continuing – Department of Circulation and Medical Imaging</i>
	11.45 –12.00	<i>Break</i>
	12.00 – 13.00	NTNU - Department of Neuroscience and Motion
	13.00 – 14.00	<i>Lunch</i>
		University of Bergen (UiB)
		Faculty of Medicine
	14.00 – 14.15	UiB, Faculty of Medicine – introductory comments
	14.15 –	UiB - Institute of Clinical Medicine and Molecular Medicine
	15.15-15.30	<i>Break</i>
	-16.45	<i>Continuing</i> Institute of Clinical Medicine and Molecular Medicine

Date	Time	Institution/department
Wed		University of Bergen (UiB)
		Faculty of Medicine
4 June	09:00 –	Institute of Medicine
	10.45 – 11.00	<i>Break</i>
	– 13.00	<i>Continuing</i> – Institute of Medicine
	13.00 – 14.00	<i>Lunch</i>
	14.00 –	Institute of Surgical Science
	15.15 – 15.30	<i>Break</i>
		<i>Continuing</i> Institute of Surgical Science
	17.00	<i>incl.</i> Department of Otolaryngology

Date	Time	Institution/department
Thu		University of Bergen (UiB)
		Faculty of Dentistry
5 June	09.00 – 09.15	UiB, Faculty of Dentistry – introductory comment
	09:15 – 11.00	<i>Faculty of Dentistry</i>
	11.00 – 11.15	<i>Break</i>
	11.15 - 1230	<i>Continuing</i> Faculty of Dentistry
	12.30 – 13.30	<i>Lunch</i>
	13:30 – 15.00	Summing up and planning for the September week

APPENDIX 5 – Time schedule week 2

Date	Time	Institution/department
Mon 15. September	08.30-09.45	<i>Panels time</i>
	09.45-10.00	<i>Break</i>
		University of Tromsø Faculty of Medicine
	10.00-10.15	Faculty of Medicine – introductory comments
	10.15-11.15	Institute of Clinical Medicine
	11.15-11.30	<i>Break</i>
	11.30-12.30	<i>Cont. Inst. of Clinical Medicine</i>
	12.30-13.30	<i>Lunch</i>
	13.30-14.00	<i>Panels time</i>
	14.00-15.30	<i>Cont. Inst. of Clinical Medicine</i>
	15.30-15.45	<i>Break</i>
	15.45-17.30	<i>Cont. Inst. of Clinical Medicine</i>

Date	Time	Institution/department
Tue 16. September	08.30-09.00	<i>Panels time</i>
		University of Oslo Faculty of Dentistry
	09.00-09.15	Faculty of Dentistry UiO – introductory comments
	09.15-10.45	Faculty of Dentistry
	10.45-11.00	<i>Break</i>
	11.00-12.30	<i>Cont. Faculty of Dentistry</i>
	12.30-13.30	<i>Lunch</i>
	13.30-14.00	<i>Panels time</i>
		Faculty of Medicine
	14.00-14.30	Faculty of Medicine – introductory comments
	14.30-15.30	Department Group of Laboratory Medicine
	15.30-15.45	<i>Break</i>
		Department Group of Clinical Medicine (IKLIN) - DNR
	15.45-17.00	IKLIN - DNR
	17.00-17.15	<i>Break</i>
	17.15-18.30	<i>Cont. IKLIN - DNR</i>

Date	Time	Institution/department
Wed 17. September	08.30-09.00	<i>Panels time</i>
		Faculty of Medicine Department Group of Clinical Medicine RH (IKLIN)
	09.00-09.10	Presentation of the Department Group of Clinical Medicine (IKLIN) RH
	09.10-10.25	IKLIN – RH: Department of Medicine
	10.25-10.40	<i>Break</i>
	10.40-10.55	<i>Panels time</i>
	10.55-11.40	<i>Cont. IKLIN - RH</i> Interventional Centre
	11.40-11.55	<i>Break</i>
	11.55-12.40	Cont. IKLIN - RH Department of Cardiology
	12.40-13.00	<i>Panels time</i>
	13.00-14.00	<i>Lunch</i>
	14.00 -14.15	<i>Panels time</i>
	14.15 -15.15	<i>Cont. IKLIN - RH</i> (Anestesi, Neurologi , Neurokir., Otolaryngol.)
	15.15 -15.30	<i>Break</i>
	15.30 -16.10	<i>Cont. IKLIN - RH</i> (Obst.gyn Pediatri)
	16.10 -16.25	<i>Break</i>
	16.25 -16.45	<i>Cont. IKLIN - Med RH</i> (Radiology, Respiratory,)
	16.45- 17.10	<i>Break</i>
	17.10 -17.30	<i>Cont. IKLIN - RH</i> (Surgery, Thorax surgery)
	17.30-17.45	<i>Panels time</i>

Date	Time	Institution/department
Thursday 18. September		Faculty of Medicine, UiO Department Group of Oslo Municipal Hospital (IOKS)
	08.45-09.20	<i>Panels time</i>
	09.20-09.30	Presentation of Department Group of Oslo Municipal Hospital (IOKS)
	09.30-11.00	(IOKS) - Ullevål, Medical Department
	11.00-11.15	<i>Break</i>
	11:15-12:00	<i>Panels time</i>
	12:00-13:00	Cont. IOKS- Ullevål: Surgical department, Anesthesiology
	13.00-14.00	<i>Lunch</i>
	14.00 -15.00	<i>Cont. IOKS – Ullevål: Gynecology/obstetrics, Paediatrics</i>
	15.00 -15.15	<i>Panels time</i>
	15.15 -15:45	<i>Cont. IOKS – Ullevål: Labfag</i>
	15:45-16:00	<i>Break</i>
	16:00-16:30	IOKS – Ullevål, Rehabilitation, Geriatric
	16.30 -16.50	<i>Cont. IOKS – Ullevål: Radiology</i>
	16.50 -17.10	<i>Panels time</i>
	17.10 -17.40	<i>Cont. IOKS – Ullevål: Patology</i>

Date	Time	Institution/department
Friday 19. September		Faculty of Medicine, UiO Department Group of Oslo Municipal Hospital (IOKS)
	08.30-09.00	<i>Panels time</i>
	09.00 -09.20	IOKS – Diakonhjemmet : Reumatology
	09.20 -09.30	<i>Break</i>
	09.30 -09.50	Cont. IOKS – Sunnaas: Rehabilitation
	09.50 -10.00	<i>Break</i>
	10.00 -11.00	<i>Cont. IOKS – Aker: Medical Department</i>
	11.00 -11.45	<i>Cont. IOKS – Aker Diabetes (tematisk forskningsområde) + Hormonlab.</i>
	11.45 -12.00	<i>Break</i>
	12.00 -13.00	<i>Cont. IOKS – Aker: Surgical department</i>
	13.00 -13.15	<i>Panels time</i>
	13.15 -14.00	<i>Lunch</i>
	14.00 -15.00	Closing of the meetings

APPENDIX 6 – CV for Panel 1

Name: Ulf Per Gustav Smith
Date of birth: May 11, 1943
Present position: Chairman and Professor of Medicine, Department of Internal Medicine, Sahlgrenska University Hospital, Göteborg University, Sweden

Education and Appointments:

1969	M.D. Göteborg University
1970	Ph.D. on thesis "Studies on human adipose tissue metabolism with special reference to cell size". Göteborg University
1971	"Docent" in Internal Medicine, Göteborg University
1974	Specialist in Internal Medicine
1983-1993	Chief of Medicine, Sahlgrenska University Hospital
1994-1999	Medical Director, Sahlgrenska University Hospital
1983-	Chairman, Dept. of Internal Medicine, Göteborg University

Research fields: Diabetes, obesity, lipid- and glucose metabolism, insulin action and insulin's signaling mechanisms. The main focus is on pathogenesis and treatment of Type 2 diabetes and related metabolic disorders.

Published ~300 original publications in the field.

Awards:

1980	Swedish Diabetes Assoc. Anniversary Award
1983	Fernström Award
1983	Acta Medica Scandinavica Award
1989	Jacob E. Poulsen Award
1996–2000	Fogarty Scholar, National Institutes of Health
1996	The Lundberg Award
1997	The Meilahti Lecture Award

Membership in academic and professional committees

1983-1992:	Assoc. Editor, Diabetologia
1983-1992:	International Journal of Obesity
1998-	Journal of Internal Medicine
1989-1995:	The Swedish Medical Research Council
1989-	Swedish Diabetes Assoc. Advisory Board
1992-	Novo Nordisk Foundation
1990-	The Medical Research Councils of Canada, Germany, Israel, Italy, France and New Zealand.
1995-	The European Union
1996-2000:	The National Institutes of Health, USA
1987-	Expert evaluator for at least 10 professorships in internal medicine and diabetes research (both experimental and clinical) in Sweden, Finland, Denmark and USA (Ann Arbor, MI and Rutgers Univ., NJ)

- Name:** Ole Fejerskov
- Date of birth:** May 4th, 1943.
- Present position:** Director of the Danish National Research Foundation, Copenhagen, Denmark and Adjunct Professor, Royal Dental College, Faculty of Health Sciences, University of Aarhus.
- Education:** 1962-1967: Training in Dentistry, University of Aarhus.
1967-1968: Internship in Oral Surgery & Oral Pathology.
1968-1970: Internship in General Pathology, University of Aarhus.
1970-1973: Assoc. Professor in Oral Pathology, University of Aarhus.
1970: *Lic. Odont.* (Ph.D.) - .
1973: *Dr. Odont.* - , Post.Doc. London Hospital, England.
1973-1993: Professor, Department of Dental Pathology, Operative Dentistry and Endodontics, Royal Dental College, Univ. of Aarhus.
- Research fields:** Experimental oral pathology, Pathogenesis of dental fluorosis. Aetiology and epidemiology of dental caries and periodontal diseases. Published about 300 papers, including 8 international textbooks .
- Awards:** 1979: *Basic Research in Oral Science Award* - International Association for Dental Research.
1984: *The Colgate-Palmolive Award for Fluoride Research.*
1985: *The Zendium Award for Dental Research*
1986: Knight of the Order of Dannebrog.
1986: Honorary Professor at Shanghai Railway Medical College
1987: Honorary consultant, Department of Stomatology, Beijing Hospital, Ministry of Public Health, Beijing, People's Rep. of China.
1988: *The European Organization for Caries Research (ORCA) Prize.*
1990: *The "DANDY" Research Award.*
1994: Odont.Dr. HC, Fac. of Dentistry, Univ. of Gothenburg, Sweden.
2003: Acta Odontologica Scandinavica Award for Excellent Contribution to Dental Research.
2003: The Yngve Ericsson Prize for research in preventive odontology.
- Membership in academic and professional committees**
- 1978-1984: The Danish Medical Research Council
1979-1987 Dean of Royal Dental College, University of Aarhus
1993-1998: Rector, The Danish Research Academy
1993-1998: Vice-chairman of the Nordic Academy for Advanced Studies established by the Nordic Council of Ministers.
1993-: Member of the Programme Committee for the Human Capital and Mobility Programme under the 3rd framework programme of EU.
1996-1998: Chairman for the working group under the TMR Programme for the EU Commission
1978-85: The Editorial Board of *Ultrastructural pathology* an International Journal on Diagnostic Electron Microscopy.
1982-93: The Editorial Board of *Journal de Biologie Buccale.*
1972-84: Associate Editor *Scandinavian Journal of Dental Research.*
1977-86: Associate Editor *Acta Odontologica Scandinavica.*
1988-97: Editor-in-Chief *Community Dentistry and Oral Epidemiology.*

Name: Alan Horwich
Date of birth: 1st June, 1948
Present position: Professor of Radiotherapy (London University, The Royal Marsden Trust & Institute of Cancer
 Director of Research & Development, The Royal Marsden Trust & Institute of Cancer Research
 Head of Clinical Laboratories The Institute of Cancer Research
 Consultant in Clinical Oncology, The Royal Marsden Hospital
 Clinical Director: South West London Cancer Research Network

Education:

MBBS London University	1971
MRCP (UK)	1974
PhD Imperial Cancer Research Fund CNA	1981
FRCR	1984
FRCP	1994

Research fields: Urological oncology and lymphomas

Awards: Bruce Cain Memorial Lecture, New Zealand Society of Oncology, Christchurch, 1992
 RS Bush Lecture, The Princess Margaret Hospital, Toronto, Canada, 1992
 Bodo von Garrelts Lecture, Karolinska Institute, Sweden, 1993
 Visiting Professor, Shanghai University, China, 1998
 Visiting Professor, University of Singapore, 2000

Membership in academic and professional committees:

RMT Clinical Research Directorate (Chairman)
 RMT Executive Committee
 RMT Medical Advisory Committee
 Institute of Cancer Research Academic Board
 Institute of Cancer Research Corporate Management Group
 Institute of Cancer Research Board of Trustees
 Institute of Cancer Research Joint Research Committee
 Cancer Research UK Programmes Committee
 National Institute for Clinical Excellence (NICE) Partners Council
 Scientific Advisory Council for SIAK (Swiss Institute for Applied Cancer Research)
 UKCCCR Coordinating Committee on Cancer Research – Lymphoma, Testis cancer, Bladder Cancer
 Lance Armstrong Foundation Scientific Committee
 UICC TNM Expert – Advisory Panel on Lymphoma
 Caldicott Guardian Institute of Cancer Research
 Co-Chair NCRI Progress Review Group (PRG) on Radiobiology/Radiotherapy
 RMT Clinical Research Governance & Risk Management Monitoring Committee
 Clinical Lead South West London Cancer Research Network

Name: **Håkan Mellstedt**
Date of birth: October 23, 1942
Present position: Professor of Oncologic Biotherapy, M.D., Ph.D., Karolinska Institutet, Managing Director, CancerCentre Karolinska, Karolinska Institutet and Chief Physician, Departments of Oncology (Radiumhemmet) and Hematology, Karolinska Hospital, Stockholm, Sweden.

Education: M.D. 1969 at the Karolinska Institute.
 Ph.D., Karolinska Institute, 1974,
 Specialist competence in Internal Medicine, 1973; Hematology, 1975; Oncology, 1983.

Research fields: Immunobiology of B cell malignancies.
 Development of biotherapeutics (antibodies, vaccine, cytokines, anti-angiogenetics) in malignant diseases. Published 400 manuscripts in peer-review journals.

Awards: Alfaferone 1989 prize (Italian Institute of Immunology)(Italy).
 Jan Waldenström Award, (International Myeloma Foundation) 2001 (USA).

Membership in academic and professional committees

President-Elect, Europ. Society for Medical Oncology (ESMO) 2003-
 Councillor of Federation of European Cancer Societies (FECS) 2003
 Chairman, National Representatives Committee, ESMO 2002-
 Member of the Executive Committee of ESMO 2002-
 Member of the Board of Directors ESMO 2002 -
 Chairman, Swedish Society of Oncology 1993-1999
 Scientific secretary, Cancer Society in Stockholm, 1994-
 Scientific secretary, King Gustaf Vth Jubilee Fund, 1994-
 Member of the Scientific Priority Committee of the Swedish Cancer Society, 1987-2000
 Member of the Research Committee of the Swedish Cancer Society 1994-2000
 Secretary of the Board of Directors of the King Gustaf V Jubilee Fund 1994 -
 Member of the Research Committee of the Swedish Childhood Cancer Society, 1996-
 Member of the Board of the Cancer Society in Stockholm, 1996-
 Member of the "Scientific Advisory Board", Multiple Myeloma Research Foundation (Boston), 1998-
 Member of the "Scientific Advisory Board" and Chairman of the Scientific Committee, International Myeloma Foundation (Los Angeles), 1999-
 Expert evaluator EU-commission "Cancer Research" 1995 - 1998
 Expert evaluator for 6 professorships in Experimental and Clinical Hematology/Oncology/Immunology in Denmark (Copenhagen), UK (Leeds, Nottingham) and USA (Pennsylvania).

Name: Seppo Kalevi Meri

Date of birth: July 1, 1957,

Present position: Professor of Immunology, Dept of Bacteriology and Immunology, Haartman Institute, Univ of Helsinki;

Education:

M.D. and Licentiate in Medicine, Univ of Helsinki	1984
Doctor of Medical Sciences (PhD), University of Helsinki	1987
Diploma in Tropical Medicine & Hygiene, University of London	1989
Docent in Immunology, University of Helsinki	1991
Specialist in Clinical Microbiology	1996

Research fields: Immunology, Microbiology, Parasitology

Awards: EMBO long term fellowship 1989

Membership in academic and professional committees:

Chairman of the Finnish Society for Immunology 1999-2001
 Chairman of the Scandinavian Society for Immunology 2001->
 President of the European Complement Network, 2001-2003
 Board of the Haartman Institute 1996-2003
 Board of the Helsinki Biomedical Graduate School 1997-2003
 Executive Committee of the Societas Biochemica, Biophysica et Microbiologica Fenniae 1999->Vice Chairman, 2002->
 Councilor of the International Complement Society (2000->);
 Executive Committee of the David Livingstone Society 2001-3
 Executive Committee of the National Library of Health Sciences (Finland) 1995-2003
 Committee for Postgraduate Studies at the University of Helsinki, 1995-2001
 Scientific Council of the 11th International Congress of Immunology, Stockholm 2001

Reviews Editor, *Scandinavian Journal of Immunology* 2000 ->
 Associate Editor, *Journal of Immunology*, 2001 ->
 Editor, *Annals of Medicine*, 2002->
 Editorial Board of *Molecular Immunology*, 2003->

- Name:** Per H. Rosenberg
- Date of birth:** July 16, 1944
- Present position:** Professor of Anaesthesiology, University of Helsinki, chairman
Department of Anaesthesiology and Intensive Care Medicine
Helsinki University Hospital, Helsinki, Finland
- Education:** 1970 Licentiate in medicine, University of Helsinki
1971 PhD Pharmacology, University of Helsinki
1976 Board certified specialist in anaesthesiology (Finland)
1974-1975 Research Fellow, Max Planck Institute of biophysical
chemistry, Göttingen, Federal Republic of Germany
1977-1978 Research Fellow, Department of Anesthesiology, University
of Washington School of Medicine, Seattle, U.S.A.
1984-1985 Visiting professor, Department of anesthesiology, Texas
Tech University Health Sciences Center, Lubbock, Texas, U.S.A.
- Research fields:** Anaesthesiology and intensive care medicine - clinical and basic
Pharmacology - clinical and basic, Clinical Pharmacology
Acute and Chronic Pain therapy - clinical and basic
Acute in-hospital and pre-hospital medicine
Approximately 240 original publications in peer reviewed
international scientific journals - mainly on pharmacology of
anaesthetic drugs, on treatment of pain, on acute medicine, and on
anaesthesia mechanisms.
- Awards:** 1990 Finnish Physicians Society, research prize
1992 American Society of Regional Anaesthesia, Lecture Award
1992 Corresponding member, German Soc of Anaesth Intens Care
- Membership in academic and professional committees**
Finnish Society of Anaesthesiology, board 1973-; president 1983-88
Scandinavian Society of Anaesthesiologists, board 1983-91 and 2000-
2003, secretary 1992-96,
ESA, member of council 1993-1996
World Federation of Societies of Anaesthesiologists, board 2000-still
Member of the Research Committee of Helsinki University Hospital
1999-2000, chairman 2001-still
Chairman of the Committee of Special Competence in Pain Therapy
(Finnish Medical Association) 2000-
Chairman of the Committee of Special Competence in Acute Pre-
Hospital Medicine (Finnish Medical Association) 2002-
Adviser of the Finnish National Agency for Medicines 1996-
Member of AGA AB Medicinska Forskningsfond 1994-2001
- Editorial activity:** Editorial responsibilities in: Acta Anaesthesiologica Scandinavica,
Regional Anaesthesia and Pain Medicine, Pain Digest, Current Opinion
in Anaesthesiology, Techniques in Regional Anaesthesia and Pain
Management, Scandinavian Journal of Surgery, Journal of Anaesthesia,
(Japan), international advisory board 1995-still, Anästhesiologie, Inten-
sivmedidizin, Notfallsmedizin, Schmerztherapie 1997-2001.

Name: Annika Rosengren
Date of birth: 1951
Present position: Professor of medicine and consultant, Cardiology, Östra hospital, Göteborg, Sweden

Education: MD Göteborg University 1980
PhD Göteborg University 1988
Board certified specialist in internal medicine 1985 and cardiology 1995

Research fields: Cardiovascular epidemiology and diabetes

Membership in academic and professional committees

1993 – 00	Member of the Board of Directors, Swedish Data Protection Office
1994 – 98	Member, Board of Directors, Swedish Association of Epidemiology
1997 -	Co-editor of Svepet, issued to members of the Swedish Association of Epidemiology
1998 - 00	Co-chairman, Board of Directors, Swedish Association of Epidemiology
2000 – 02	Chairman, Board of Directors, Swedish Association of Epidemiology

Name: Cornelis A. Visser
Date of birth: January, 24, 1944
Present position: Professor of Cardiology
 Chief, dept. of Cardiology, VU Medical Center
 Chairman, division IV, VUMC
 Vice-chairman, "stafconvent" VUMC
 Director, Interuniversity Cardiology Institute of the Netherlands (ICIN)
 Chairman Scientific Board ICIN

Education: 1970 Doctoral in Medicine, University of Amsterdam
 1972 M.D., University of Amsterdam
 1978 Cardiologist, University of Amsterdam
 1982 PhD, University of Amsterdam: "Echocardiography in acute and chronic myocardial infarction".

Research fields: Cardiac Imaging

Membership in academic and professional committees:

- Dutch Society of Cardiology
- European Society of Cardiology
- Working Group of Echocardiography of European Society of Cardiology
- American Heart Association
- Clinical council of American Heart Association
- American College of Cardiology
- American Society of Echocardiography
- International Society of Cardiovascular Ultrasound
- Fellowship professional organizations:
- American College of Cardiology
- American Society of Echocardiography
- European Society of Cardiology
- Editorial Board:
- Journal of the American College of Cardiology
- Heart
- Echocardiography
- European Journal of Echocardiography
- Journal of the American Society of Echocardiography
- Journal of Cardiovascular Diagnosis and Procedures
- Non-invasive Cardiology
- Netherland Journal of Cardiology

Name: Irvin M. Modlin
Date of birth: March, 14, 1946
Present position: Professor of Gastroenterological and Endoscopic Surgery, Yale University, School of Medicine
 Director of the Gastric Pathobiology Research Group

Education:

1968	M.B., Ch.B. Cum Laude, Cape Town,
1975	F.C.S. (South Africa)
1975	F.R.C.S. (Edinburgh)
1986	F.A.C.S
1987	M.A. (Hon Causa), Yale
1989	Ph.D, Cape Town
1991	M.D (Hon Causa), Gothenburg, Sweden
1998	F.R.C.S (England)

Research fields: US. Federal government and the National institutes of Health funding 1984 to date in the areas of: i) molecular physiology of acid secretion and ii) growth factor regulation of cell transformation and iii) molecular biology of neuro endocrine tumours.

Awards: (from 1996)

1996	Fulton Society Lecture
1997	Proud Society Lecture
1998	The Royal Society of Medicine
2000	Centenary address – The Japanese Surgical Society
1996 & 2002	Awarded the Hunterian professorship of surgery by the Royal College of surgeons of England and a James IV professorship of surgery by the Royal College of Surgeons of Edinburgh. Yale department of surgery teaching prize on 14 occasions, The University of Cape Town Post-graduate in Medicine Welcome Foundation Travelling Scholarship.

Membership in academic and professional committees: (from 1981)

1981	New York Gastroenterology Society
1981	American Society for Gastrointestinal Endoscopy
1983	Gastrointestinal Research Group
1984	American Physiological Society
1984	Connecticut Society of American Board Surgeons
1984	V.A. Surgical Association
1984	Timothy Dwight College – Yale
1985	Eastern Gut Club
1985	Society of American Gastrointestinal Endocrine Surgeons
1986	Sigma Xi, Scientific Society
1986	Beaumont Club
1986	American College of Surgeons
1987	International Gastro-Surgical Club
1992	Athenaeum Club, London
1994	Proud Club, London
1998	Royal College of Surgeons of England

