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Externe visitatie ICaR-VU

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Geacht College,

Namens de board van het onderzoeksinstituut ICaR-VU bied ik u met genoegen het evaluatierapport aan van de externe evaluatie commissie.

Ik verzoek u om de UTC te vragen het rapport van commentaar te voorzien en dit terug te koppelen aan de rector VU en aan de decaan VUmc.

Tijdens ons reguliere overleg zou ik graag de bevindingen bespreken waarna ik deze zal terugkoppelen aan de directeur van ICaR-VU met het verzoek om de aanbevelingen in een plan van aanpak te verwerken.

Met vriendelijke groet namens de raad van bestuur,

A handwritten signature in blue ink, appearing to be 'W.A.B. Stalman', written over a blue circular stamp.

Prof.dr. W.A.B. Stalman
Lid raad van bestuur en decaan

**Institute for Cardiovascular Research
VU University Medical Center**



**External Evaluation Report
22 - 23 April 2013**

Summary

ICaR-VU is very successful in stimulating and facilitating the VUmc cardiovascular research with a clear translational scope. The research is of high quality and has a firm position within the VUmc and within the (inter)national field. There is a strong coherence between the investigators in the institute as a result of effective leadership.

Theme H has a distinct focus with highly relevant topics. Theme V is much broader defined, including a variety of different research themes. To build on more quality and better coherence of the research, splicing Theme V into more identifiable and recognisable programmes would be advised.

The research and training environment for PhD students and postdocs is attractive and of high quality. The young scientists are aware of their position and possibilities in the institute. Creation of a career development plan for the postdocs is vital in order to keep and attract the future research leaders.

In the coming years, the AMC-VUmc alliance will bring structural changes to the functioning of the institute as well as opportunities for the researchers to access the best facilities of both centres. Continued strong leadership of ICAR-VU is essential to ensure its success as the alliance is developed.

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Introduction

External evaluation

This report describes the findings of the External Reviewing committee (ERC) as a result of the assessment of the research as facilitated by the Institute for Cardiovascular Research of the VU University (ICaR-VU). This assessment was at the request of the dean of the VU University Medical Center (VUmc) Board of Directors commissioned by the Director of ICaR-VU.

Periodic external evaluation of scientific research is essential for two reasons: to improve the quality of research and research management, and to provide accountability of the research institute towards fellow universities and university medical centers, funding agencies, government and society at large.

The evaluation is based on the Dutch Standard Evaluation Protocol and covers the functioning of research institute ICaR-VU itself and the scientific value of its research themes, Theme H and Theme V. The findings of the ERC include assessment ratings about the quality, productivity, relevance and prospects, including vitality, feasibility and future directions and an overall rating. The ratings used are Excellent (5), Very good (4), Good (3), Satisfactory (2) and Unsatisfactory (1).

The External review committee (ERC) consisted of

Prof. dr. Ernst E. van der Wall, Director ICIN/ Netherlands Heart Institute, Utrecht *chairman*

Prof. dr. Marion Delcroix, Head of the Center for Pulmonary Vascular Disease, department of Pneumology, University of Leuven, Belgium

Prof. dr. Jeremy D. Pearson, Associate Medical Director, British Heart Foundation and Cardiovascular Division, King's College, London.

Prof. dr. Eugene J. Barrett Department of Medicine, Division of Endocrinology and Metabolism, Charlottesville, VA, USA.

Dr. Sanneke A.M. van Vliet, Research Office, Academic Medical Center, Amsterdam, *secretary*

This assessment is based on documentation provided by the institute and a site visit.

The documentation included a Self Evaluation Report 2004-2011 with the supplementary information: ICaR-VU Progress report 2010-2012, overview of the institute's publications 2004-2011, a bibliometric study of the Dutch Academic Medical Centers 1998-2010/11, an accreditation letter of the VU Research Master Cardiovascular Research and the report of the external evaluation of 2005.

During the afternoon of day 1 of the site visit there were meetings with the dean of the VU Medical Center, the director of the ICaR-VU, the chair of the scientific committee, the research theme leaders and the chair of the education committee. Through presentations and discussions the ERC was informed about the structure of the institute and themes and some illustrations of research outcomes. The day was concluded with visits to the imaging facilities and physiology department.

On the morning of the second day the ERC met with selected PhD students and postdocs, who briefly presented their research, background, and future perspectives.

After a closed meeting and final discussion with the director of the institute, the first observations of the ERC were presented to a large audience of ICaR-VU researchers.

ICaR-VU

The Institute for Cardiovascular Research of the VU University (ICaR-VU), founded in 1992, has a mission to stimulate and promote interdisciplinary translational cardiovascular research to enable 'from patient to gene' coverage. The ICaR-VU is one of the five research institutes of the VUmc and participates in Human Health and Life Sciences, one of the four focus areas of the VU University Amsterdam. The ICaR-VU harbors research groups of clinical and/or preclinical investigators from 18 departments in four divisions of VUmc, thus facilitating a multidisciplinary approach to research, patient care and medical education. The institute is responsible for the quality, ambition and focus of the research, whereas the divisions, each consisting of several departments, provide the necessary resources (finances, personnel, infrastructure).

Research is concentrated in two themes:

Theme H: Improvement of Cardiac Function in Heart Failure

Programme on Heart Failure and Pulmonary Arterial Hypertension

Theme V: Improvement of Vascular function in Metabolic Diseases

Programme on Ischemia and Repair

Programme on Circulation and Metabolism

Evaluation of the institute

Quality	Very good to excellent
Productivity	Very good
Relevance	Very good to excellent
Vitality and feasibility	Good to very good
Overall	Very good to excellent

Structure of the institute

The committee found that the ICaR-VU is very successful in meeting its ambition to stimulate and facilitate collaboration between the 18 VUmc departments involved in cardiovascular research. It has a recognised and established position within VUmc and it clearly encourages the communication between the departments leading to new research initiatives. It is clear that ICaR-VU fills a need, a philosophy that is underscored by all participating researchers.

The coherence within the institute is a result of an effective directorate and the very strong connection with the physiology department, as this is the department involved in most research lines. This offers the opportunity for leading researchers to participate in the several committees of the institute.

The Think Tank is an excellent initiative to advise the institute on upcoming research related issues as well as an excellent platform for young researchers to participate in discussions at institute level. The steps taken to make the Think tank independent from

the scientific committee gives the Think Tank influence. However, it is important to systematically track on the discussion outcomes.

The institute also houses some talented young research leaders, from whom a strong future is expected to bring the institute to a next upward level.

Translational research

The ICaR-VU is clearly aimed at connecting basic and applied research, which is of relevance to its mission to find solutions for cardiovascular suffering. The significance of translational research is very well reflected by the choice of interesting research topics in specific niches and the collaboration between the preclinical and clinical scientists.

The committee observes that, despite the environmental pressure such as demands from care and education, the ICaR-VU researchers maintained a distinctive approach to translational research. This is a result of strong commitment of researchers to the institute as well as a result of effective leadership. This focus was further improved via an introspective analysis ('Vitale functies') to check if their research lines met the translational criteria, which resulted in cancellations of some research activities.

The organisation of translational research within ICaR-VU is recognised by the VUmc board as an example for the other VUmc institutes. The fact that the preclinical and clinical researchers work on the same campus stimulates the interaction even more.

The institute has a limited ambition in participating in multi-centre trials. On one hand this gives a clear emphasis to investigator-initiated translational research at ICaR-VU. On the other hand, perhaps it limits the opportunity to influence clinical guidelines and therefore expand the societal impact of research.

Quality and focus

Overall the quality of the research is very good to excellent. The ICaR-VU is positioned in third place among the Dutch UMCs, based on the mean normalised citation score of the CWTS. The output of scientific publications increased in the last years, together with the number of researchers. However, the number of publications among the 25% top journals did not significantly increase, pointing out to a growth in number, but not in average quality.

The previous ERC recommended that research of ICaR-VU had to be more focused. The current ERC acknowledges the progress made, including the latest analysis on the translational aspects of the research lines. Despite this, there is still a diffused focus mainly present in Theme V (see "Research Themes" below).

In addition, the committee observed a tension between focusing on the most excellent research and attempting to include all cardiovascular-related research performed at the VUmc. An important question for the future direction of the institute is: What does the ICaR-VU want to be the best at? The institute houses many research lines. Some

clearly excel within their niche, but the committee could not adequately distinguish from the other research lines which ones clearly comprised to the excellence of the institute. To maintain or expand the outstanding position of ICaR-VU within the national and international field, the quality of research activities should be uniformly high. An analysis of quality and productivity at the level of the research lines would provide the institute the ability to compare these performances to the ambition level of the institute.

The ICaR-VU researchers are clearly aware of the societal impact of their research by already bringing their research results outside the academic context. These activities, for example, public private partnerships, patient participation or informing the general public are nowadays actively stimulated by the funding organisations and will therefore become an even more important aspect of research in the coming years.

Position

ICaR-VU has a strong position amongst the other VUmc institutes. It is the second best institute considering the productivity and impact of their research. The institute strives to cross-fertilise with other VUmc institutes, mainly with the EMGO+, the public health research institute, though it was not clear to the committee what the result and output was from this collaboration.

At a national level the institute recently joined the Rembrandt Institute (a collaboration between AMC, LUMC and Sanquin). In the coming years this collaboration will intensify as this institute is undergoing a transition from a virtual institute towards a more visible, genuine, and structural institute.

Intensifying collaborations with other Dutch cardiovascular institutes, especially the upcoming AMC-VUmc alliance, is important to assure a strong position within Europe (Horizon 2020) as well as in The Netherlands (CVON) as the funding is now often distributed via large consortia. ICaR-VU has close logistic and scientific relations with the national ICIN/ Netherlands Heart Institute (Utrecht) based on a long tradition of having ICIN-professors and ICIN-fellows.

AMC-VUmc alliance

It is not yet clear in what direction the organisational structure of the ICaR-VU will develop in the coming years as a result of the alliance between AMC and VUmc. Cardiovascular research in VUmc and AMC are both translationally oriented and seem to be complementary to each other. More intense collaboration will provide opportunities to extend some research lines together with the specialities of AMC. For example: integrating genetic analysis and risk assessment in the heart failure programme. An important shared goal must be to further strengthen the national and international position of cardiovascular research in Amsterdam by integrating the best research from both centres.

To have a successful alliance, the ICaR-VU needs an effective organisational leader, who is able to keep up the high quality of the research and strong coherence in the

institute and who can give guidance to the changes the alliance will bring. This leadership not only advantages the strong outcome of the alliance but also the successful management of changing directions.

As the present director will retire in due time, it is recommended to find a successor in the near future to benefit from the present momentum in the institute.

Research funding

Current external funding is at significantly higher level than in the earlier years. It seems that ICaR-VU is successful in applying within national and international consortia. A potential threat is the reduction of available external money flow due to the economic crisis and the resulting budget cuts. Strategies to overcome a sudden drop in external finance must be in place. An example can be direct donations to the university.

The ICaR-VU has little ability to steer the research programmes via financial incentives as the direct funding of research is distributed via the departments. The ERC supports the development of a new funding format of the VUmc where the director of the ICaR-VU, as member of the Research Council, has more influence on the assignment of budgets according to scientific quality and productivity.

Next generation

The ICaR-VU is an attractive and extremely good research and training environment for PhD students and postdocs. The committee was impressed by the awareness of the young scientists about their place within the institute and possibilities for collaboration. Most PhD students are supervised by a clinical and a basic scientist. This benefits the PhD students as it trains them to have a research career at the interplay of basic and clinical sciences. The good international collaborations of the senior scientists provide the younger scientists opportunities for research experiences abroad during or after their PhD.

The educational programme for PhDs is sound and tailor-made. Especially the topics for the colloquia are an informative addition to the basic programme, which can be of interest for the young postdocs as well.

Scientific integrity is an important topic in the research training of PhD students. At the start of their project, PhD students already receive the VUmc Research Code. However, later in the project, when the PhD student becomes more independent, it becomes even more important. Last year, the education committee organised a colloquium on scientific fraud. An idea would be to structurally include this in the educational programme.

The development of a standardised selection, supervisory, monitoring, and evaluation procedure would strengthen the programme. However, it will be most pragmatic if this is executed by the institute itself, as the educational programme is interwoven in the responsibilities of the institute and the scientific committee is already involved in the judgement of the project proposals.

The number of PhD students has increased in the past years and proves the attractiveness of the institute to pursue a PhD thesis. However, to maintain their successful PhD programme, an important role for the institute is to ensure that the quality of supervision remains at a high level. This is potentially threatened if the number of staff researchers is not increasing at the same rate and/or the time pressure on the staff to combine supervision with other investigative, educational and/or clinical tasks increases.

Talented MD-PhD students are essential for the new generation of clinical researchers to ensure translational research. However, often the PhD phase is followed by a speciality training where there is hardly any time to conduct research. During this period the interest of a large group shifts towards the clinic and the PhD's do not return to science again. For the group that stays interested in research it very difficult to conduct research or supervise a PhD student or technician during their specialisation training. The ERC strongly supports the need for protected time within the speciality training to be reserved for this group, both for the benefit of the researcher to steadily build his track record and for the quality of the training of the PhD student.

The Cardiovascular Research Master degree programme has been successfully initiated by the ICaR-VU. This attracts at an early stage students interested in cardiovascular research and provides a great opportunity to scout the highly talented researchers for a PhD trajectory. The ICaR-VU scholarships are in this context a nice way of offering talented Master students a PhD position.

There is an imbalance between the higher number of PhD students and the number of tenured positions as well as a substantial fall in the ratio between males and females after the PhD phase, with females in the minority in staff positions. Both are well-known career-related issues, which are recognised at a broad scientific level and not directly caused by, or possible to be solved by the institute's policies. However, a clear career development plan for researchers after their PhD, including mid-career opportunities, would favour the institute in 'home-growing' or attracting future ICaR-VU research leaders. Career awareness is becoming more important in the new format of distributing direct funding by VUmc, as well as being successful in the highly competitive personal funding via external sources. On top of that, it is a logical continuation of the talent development programme, which already started with the research master.

Evaluation of the research themes

Theme H

Quality	Very good to excellent
Productivity	Very good to excellent
Relevance	Excellent
Vitality and feasibility	Very good to excellent
Overall	Very good to excellent

The research in Theme H aims to unravel pathophysiological mechanisms underlying myocardial- and pulmonary remodelling and impaired cardiac function. There is a clear focus to distinct, highly relevant topics, which are complementary to each other, and clear decisions are made about what to include and what not. For example, the effects of ischemia on the heart are not covered by Theme H but by Theme V instead. However, there is a lot of interaction between the various research lines, as researchers work on more than one topic and there are cross-links with researchers in Theme V. The output of the theme is steady and of a high quality, and the impact of the research, according to international standards, has increased in the last years. The theme has shown the ability to attract funding through prestigious personal and large consortium grants.

The theme fulfils the translational mission of the ICaR-VU by addressing basic and clinical questions as well the interaction between preclinical and clinical researchers.

With their plans for teaming up with clinical chemistry for miRNA analysis, with pathology for research into cardiomyopathy and with AMC researchers for genetics analysis and risk assessment, there are ample opportunities for upcoming research in this theme.

Theme V

Quality	Very good
Productivity	Very good
Relevance	Good to very good
Vitality and feasibility	Good
Overall	Good to very good

The theme includes two main programmes: Ischemia and Repair and Circulation and Metabolism. The research in Theme V is of high quality. The productivity has increased with the same # of FTEs available for research, which conveys that the Theme consists of some vital research lines. This holds in particular for the research on Ischemia/repair and Diabetes Mellitus and micro-vascularisation. However, overall there was more a growth in quantity rather than quality.

During the site visit some research lines within the Theme V were less visible to the ERC. These were the research lines on nutrition, pre-eclampsia, chronic kidney disease, peri-operative care and gynaecological disorders. The committee remarks that some of these research lines are possibly less translational than the more prominent research lines and do not meet the institute's ambition in translational research. Probably, the research is relevant for the particular patient groups of the VUmc, but the positioning of these research lines within the institute diminishes the focus of Theme V. In addition, as these topics were not presented to the committee during the external visit, it is difficult for the committee to make an adequate judgement what quality these research lines deliver and to foresee in what direction the theme will develop. The serious concern of the committee is therefore that Theme V is too broadly defined. One result is that the output of the strong research lines might be off balanced by less outstanding research. As mentioned earlier in this report, in order to maintain a strong position of the institute

and Theme V, the quality of all research lines should be uniformly high. A large diversity in topics precludes firm statements about future prospects of Theme V. More focus and better representation of the research lines by splitting the two programmes into two separate clearly identifiable and more uniform themes would improve the accountability and visibility of all the research within the various research programmes.

The Imaging Center of VUmc is noted by the ERC as an important research infrastructure for both Themes. Especially PET imaging, combined with other imaging techniques, plays a vital role. Unfortunately, the committee did not have a clear impression of the position and functioning of the Imaging Center within the ICaR-VU because of the unforeseen absence of the director of the centre.

Recommendations

- To introduce a periodic reflection on the follow-up of the outcomes of the Think Tank.
- To perform an analysis of quality and productivity at the level of the research lines to compare these performances to the ambition level of the institute.
- For Theme H, to expand their research opportunities by teaming up with different VUmc departments as well with other institutes.
- For Theme V, to create more focus and better representation of the research lines by splitting the two programmes into two separate clearly identifiable and more coherent themes. This should improve the accountability and visibility of all the research within the various research programmes.
- For the AMC-VUmc alliance, an important shared goal must be to further strengthen the national and international position of cardiovascular research in Amsterdam by integrating the best research from both centres.
- For the coming years, the effective organisational leadership has to be continued, to give guidance to the changes that the AMC-VUmc alliance will bring and to keep up the high quality research ICaR-VU.
- To have strategies in place to overcome a sudden drop in external finance.
- To expand the ability of the institute to steer research into promising directions, by applying the new funding format of the VUmc.
- To reserve protected research time within the speciality training of MD-PhDs to steadily build their scientific productivity and to guarantee the quality of the training of their PhD students.
- To develop a clear career development plan for researchers after their PhD phase, including a follow-up of the career path of former PhD students.

