

EMGO⁺ Institute

External Evaluation Committee Report
3-4 October 2016



External evaluation

This report describes the findings of an external evaluation committee that convened in October 2015 to perform an assessment of the research conducted by the EMGO⁺ institute. This assessment was conducted at the request of the board of VU University Medical Center Amsterdam (VUmc).

Periodic external evaluation of scientific research is to be conducted by an external evaluation committee according to the standard evaluation protocol (SEP) 2015-2021 as established by the Netherlands to reveal and confirm research quality and its relevance to society, and to make recommendations to improve these when necessary. This assessment focuses on the strategic choices and future prospects of the research institute EMGO⁺. Giving special attention, as proposed by EMGO⁺, to the multidisciplinary focus of the research teams and research output; the translational focus of the research in terms of clinical and societal relevance; and expanding academic leadership of the VU medical center beyond the area of cure and care on an intramural setting. Assessment of the quality and relevance of research fulfill a duty of accountability towards government and society.

The findings of this assessment include qualitative and quantitative assessment of the research quality, relevance to society and viability, and recommendations concerning these criteria, as well as others on the PhD program and research integrity according to the SEP protocol 2015-2021. Appendix 1 provides an explanation of the rating categories.

The external evaluation committee members were the following:

Prof. Chris van Weel (chair), Emeritus Professor of Family Medicine/General Practice at Radboud University Nijmegen in The Netherlands, Professor of Primary Health Care Research at the Australian National University in Canberra, Australia and Past President of WONCA;

Prof. Elaine Hay, Professor of Community Rheumatology, Keele University, UK and director of Primary Care and Health Sciences;

Prof. Sidney Kennedy, Professor of Psychiatry and Chair of Depression and Suicide studies, University of Toronto, Canada and lead investigator for the Canadian Biomarker Integration Network for Depression;

Prof. Frank Sullivan, Director Scottish School of Primary Care and the NHS Tayside, UK, Professor of Research and Development in General Practice and Primary Care, University of Dundee, Research Professor, University of Toronto;

Prof. Viola Vaccarino, Professor and Chair of the Department of Epidemiology, Rollins School of Public Health, Emory University, US with a joint appointment in the Department of Medicine, Division of Cardiology, Emory University School of Medicine;

Prof. Nick Wareham, Director of the MRC Epidemiology Unit, University of Cambridge, UK, co-Director of the Institute of Metabolic Science.

Dr. Sanneke van Vliet, Research Office, Academic Medical Center, Amsterdam, *secretary*
The research foci of the committee members are described in appendix 2.

This assessment is based on documentation provided by EMGO⁺ and on a site visit by the committee on 3-4 October 2016. The documentation provided to the committee included a self-assessment report 2010-2015 with appendices based on the SEP 2015-2021, External Evaluation Report 2010, over the period 2004-2009, EMGO⁺ Annual Report 2015. The raw data underlying the self-assessment report was available for review via a secure website. The site visit included meetings with the board of deans, executive board of EMGO⁺,

program leaders, professors, associate and assistant professors, postdoctoral fellows, PhD students, representatives of the Science Committee, Quality Committee and PhD Program Committee, and a walk around the campus. The site visit program is included as Appendix 3. The preliminary observations of the external evaluation committee were presented verbally to the executive board of EMGO⁺.

The EMGO⁺ institute is at the forefront of an integration with the public health research of the Amsterdam Medical Center into the new Amsterdam Public Health institute. In this report the evaluation of the viability is positioned within the context of the existing EMGO⁺ institute and did not take into account the contribution of the AMC research and the foreseen structure, capacity and quality of the new Institute.

EMGO Institute for Health and Care Research

The EMGO Institute for Health and Care Research (EMGO⁺) is a multidisciplinary research institute that brings together 725 researchers from departments of three different science communities, i.e., from the VU University Medical Center and the Vrije Universiteit (VU) Faculties of Behavioural and Movement Sciences, and Earth and Life Sciences. Since the inception of the EMGO institute within the VUmc in 1987, EMGO researchers have performed high-quality research in the ExtraMural (public) health care domain on prevention, primary care, rehabilitation and long-term care. In 2009, the EMGO institute evolved to the EMGO⁺ Institute by including many researchers from VU departments, thus strengthening its multidisciplinary character.

The EMGO⁺ mission is to generate, conduct and publish excellent research of international standing to improve practice in public and occupational health, mental health care, primary care, and long-term care. To support the mission, EMGO⁺ Institute's objectives are to:

- monitor the quality and integrity of research,
- actively support acquisition of research funds,
- build and maintain a unique research expertise and infrastructure,
- ensure a focus on societal relevance and impact on daily clinical practice.

All research projects carried out at EMGO⁺ are embedded in one of four research programs:

1. Lifestyle, Overweight and Diabetes (LOD)
2. Mental Health (MH)
3. Musculoskeletal Health (MSH)
4. Quality of Care (QoC)

EMGO⁺ research includes qualitative and quantitative approaches, and most studies are either executed within large population-based cohorts or in public health and extramural medical practice settings, such as general practices, specialized mental health care organizations, residential homes for the elderly, nursing homes, schools, worksites and occupational health care settings. In addition, a variety of intramural studies is conducted on organization, safety, effectiveness and quality of care in the hospital.

Assessment of the research institute

Research Quality

The EMGO⁺ institute has been successful in creating robust multidisciplinary research programs with a broad spectrum of local, national and international collaborations and high research productivity. The institute produced over 1,600 publications in 2015, mostly (76%) as refereed papers, and this number has steadily increased since 2010. More than a quarter (28%) were published in the top 10% journals of their respective field based on impact factor, and more than half (57%) were published in the top 25% journals.

Researchers affiliated with EMGO⁺ have increased 45% since 2010, from 498 to 721, and the total amount of time spent by them on actual research increased 16%, from 285 to 332 fulltime equivalent (fte) person years (see appendix 4).

Researchers in the EMGO⁺ Institute coordinate and maintain a number of established cohorts and biobanks that represent unparalleled resources to scientists and PhD students. These include, among others, the Netherlands Twin Register (NTR), the Netherlands Study of Depression and Anxiety (NESDA), the Netherlands Study of Depression in Older Persons (NESDO), and the Longitudinal Aging Study Amsterdam (LASA).

The academic reputation of the institute is impressive, as demonstrated by the many invited presentations at national and international meetings, and many awards and honors received, including prestigious memberships in the Royal Netherlands Academy of Arts and Sciences, among other recognitions.

In summary, the EMGO⁺ Institute is a leading research institute with a worldwide reputation. The research produced by the institute is top-notch and productivity is impressive and growing.

However, there is a concern that the funding of the research is not keeping pace with the growth in number of researchers, mainly PhD students. This means that the budget is becoming tight. This is partly due to the reality that the direct money available for research is relatively small. The main part of the direct money stream is used to finance senior staff. This means there is a high demand on the senior staff to supervise these PhD students. However, for a sustainable and adaptable institute it is important that senior staff has time and resources to remain actively involved in conducting research themselves.

Societal Relevance

A major goal of EMGO⁺ is to produce research that goes beyond the academic setting to impact clinical care and society as a whole. This objective towards societal benefit adds special significance to the scope of the institute's work. EMGO⁺ takes advantage of direct collaboration among academic partners, clinicians, patients, and students. This helps to integrate research, clinical practice, education and policy, enhancing the societal benefit of the research done.

EMGO⁺ presented some excellent examples of cooperation with societal parties, practical translation and output with societal impact. This translation back to practice is mainly based on individual examples. It is desirable to have more structural attention in all research programmes to extend this to a more broadly applied mechanism. The leadership of EMGO⁺ is in an excellent position to stimulate a proactive policy towards linking to society and

influencing local, regional, national and European policy. To be an important actor at the European level in the creation of health policies, the EMGO⁺ and the upcoming Amsterdam Public Health institute must have the ambition and strategy to be the largest public health institute in Europe.

The connection with daily practice can be further strengthened by involving more clinicians in research, not only those working within the VUmc, but also general practitioners, physiotherapists, midwives. In some programmes the contribution of clinicians is less apparent. It is important to have clinicians with a research background involved in EMGO⁺, as they can serve as bridge builders between research and practice. This could strengthen for example the formal rigorous scientific evaluation and improvement of preventive programmes through academic research. Therefore a clear strategy is needed to stimulate clinicians to remain involved in research. EMGO⁺ has the potential and indeed a responsibility to support the development of future clinical academics.

Viability

The EMGO⁺ Institute is at the forefront of an integration with the public health research of the Amsterdam Medical Center (AMC) into the new Amsterdam Public Health institute. The committee sees the advantage and potential of working together to substantially expand the scope of research. It will create more synergy and the integration of new research themes including a broad range of common chronic diseases, aging, global health, personalized medicine and methodology.

The committee could not anticipate on all the consequences of the integration as it had no detailed insight into the research structure, research capacity and quality of the new Institute. But based on the identified current strength of EMGO⁺, the committee was concerned about how this would be retained in the Amsterdam Public Health Institute. This is particularly the case in four aspects of the programming of research:

1. *Research organisation and quality control.* The VUmc and AMC have different research structures, which have to be integrated. The EMGO⁺ Institute has excellent research structures in place like the Scientific Committee and Quality Committee, which organises the research program in a manner that maintains overall quality and provides appropriate oversight and intercollegiate connectivity. We understand that the AMC has a model with a greater emphasis on the role of principal investigators. Given the stated strategy during the merger: *the best of both worlds model*, as emphasised by EMGO⁺ leadership, the committee strongly recommends to maintain this high level of EMGO⁺ research organisation and quality control and not compromise on this.
2. *Research leadership.* A clear strategy and policy will also help the institute to focus on the quality of the research and have firm position in place to address unavoidable politics that come with a merger. Investment in strong leadership and in leadership development for the next generation is important as well. The current board is composed of outstanding leaders. However, in the new larger institute, the program leaders will play an active role in advancing newly created programs and other staff will also be involved to enable the realization of the programs.
3. *Critical mass and visibility of research domains.* There were some concerns that breaking up of some programs like MSH will lead to the loss of critical mass that EMGO⁺ has developed over the past decades. The new ordering of programs could result in some

broadening of programs, with a potential loss of scientific identity of more focussed programs. An attractive element of the proposed structure is that it offers researchers the opportunity to work in two (or more) programs.

4. Focus and depth. The new programs were presented and seemed to be based on an inclusion of all Public Health research of the VUmc and AMC. The committee understands that in this phase of a complex merger one cannot exclude research topics and that other political issues and dynamics are important considerations. However, even in a larger institute, it will still be important to focus. Therefore, the committee advises to develop a strategy for the research for the coming five years and make early decisions in setting priorities. In this way the new institute will keep the momentum from its constituent institutes and become recognized as one of the best public health institutes of Europe.

These points will be specified in the context of the assessment of the four programs.

Quantitative assessment of the Research Institute

Quality	1	Excellent
Relevance to society	1	Excellent
Viability	1	Excellent

Assessment of the research programs

Lifestyle, Overweight and Diabetes

This research program aims to impact on the obesity and diabetes epidemics by identification of the primary lifestyle and biological determinants and by evaluation of efficient ways to improve lifestyle in order to prevent disease and to improve outcomes in people with chronic diseases such as diabetes and cardiovascular disease. These themes are studied in children, adults and the elderly population.

The research is excellent and the outcomes have high relevance to society. However, the program has very broad aims covering the full spectrum of research in obesity and diabetes from etiology, individual and societal prevention through to evaluation of the effectiveness of treatment and the organization of health care systems across all ages. This breadth is far greater even than most of the world's Institutes that are entirely focused on obesity and diabetes. For this research breadth to be tackled with only 8.8 fte core scientific staff is a major challenge.

Research on diabetes treatment and care, particularly the quality of care was not prominent in the report and the links to biological understanding were limited. The research is mainly in the lifestyle area with a focus on factors involved in the development of diabetes rather more than its progression. The committee therefore noted that the aims of the program are broader in definition than the reality of what the program is covering in practice. It may be better to articulate a more focused goal.

It is important in this case to reflect critically on the scientific ambition of the program and to identify an international scientific niche, so that the program can position itself to continue to undertake cutting edge research at the top of the research field. This needs a clear strategy and strong leadership to continue to focus on the strengths of the program, which

the committee sees in the lifestyle research.

This strategic reflection is even more important in the context of the proposed merger of EMGO⁺'s LOD into the projected new program Health Behaviors and Chronic Disease in the new Public Health Institute. With the inclusion of AMC's research on other chronic diseases as cancer as well as other determinants of health such as smoking and alcohol, the general direction is towards a much greater breadth of research. This may affect the continuation of high productivity.

EMGO⁺ has important cohorts, which generate many relevant outcomes. However, the nature of epidemiological research is changing with more consortia-based studies and open access to very large cohort studies. A strategy with respect to these changes is needed so that there is clarity about areas where LOD can and will aspire to lead or those where they are content to contribute in order to optimize the use of the existing data.

Quantitative assessment of the Lifestyle, Overweight and Diabetes program

Quality	1	Excellent
Relevance to society	1	Excellent
Viability	2	Very good

Mental Health

The Mental Health program identifies three themes for research. Epidemiology, Prevention and Treatment, and Developmental Perspectives. The program is and was led by top researchers with a high productivity and high quality output. The publication output of the whole program has increased over recent years. There has been a progressive growth in scientific core staff, PhD students and other scientific staff (increase of 97 to 135 fte) between 2010 - 2015. This makes Mental Health the largest of the 4 programs by staff. Their funding increased got up markedly, specifically by obtaining large EU consortium grants. The research is highly relevant as they are working and publishing across many of these areas indicated as challenges for global mental health. Overall, this group performs amongst the world leaders in designated areas of Mental Health and is addressing current societal needs, using modern approaches and technologies in a well-organized and viable infrastructure.

Within the new Amsterdam Public Health Institute, the Mental Health program will continue as it is complemented with a small group of AMC researchers on other psychiatric diseases including addiction, obsessive compulsive disorder and posttraumatic stress disorder. The expectation is that it will further lead to strengthening of the research lines with a cross disorder approach. The link with basic research is secured, as Prof. Penninx will assume program leader of the Mood, Anxiety and Psychosis program of Amsterdam Neuroscience Institute. This new structure will facilitate its broader perspective and sustain collaboration from basic science towards the clinic.

Quantitative assessment of the Mental Health program

Quality	1	Excellent
Relevance to society	1	Excellent
Viability	1	Excellent

Musculoskeletal Health

The MusculoSkeletal Health research program consists of three themes focusing on the epidemiology, prevention and treatment of musculoskeletal disorders. Research outputs from the group are impressive, both in terms of quantity and quality. Overall 89% of the research from this program was published in the top journals - 33% in top 10% impact and 56% in top 20%; mean normalization citation score 1.46. The number of publications has been maintained during the 5-year period (234-321).

The research from this small, but elite group is clearly relevant and of high quality, with potential for high impact. These outputs and the capacity to attract external grant income are particularly impressive given that, during this assessment period, the size of the group has decreased from 48.9 to 30.7 total research staff.

The group has forged successful collaborations with both clinical (e.g. Amsterdam Spine Center) and other academic groups (e.g. MOVE) in response to feedback from the previous review. The MSH program now covers a wide range of fields – basic science, clinical, methodology, health economics and health service research. These new collaborations have created opportunities for new research advantages as well as a new finance model.

Despite the reduction of staff and funding, the MSH program remains very impressive in terms of the number and range of their PhDs, including those jointly linked to clinical and other academic collaborators. MSH developed a creative solution to maintain the number and range of their PhDs. They successfully applied the model of embedded PhDs, who are employed by, for example, rehabilitation and national social security centers. Important for these projects is the quality and feasibility review by the Scientific Committee at the start of each project, and with guaranteed academic supervision. This is particularly important, as they are not EMGO⁺ employees.

One of the causes of the decrease in external funding seems to be a reduced attention to MSH disorders. To secure funding, a greater emphasis and lobbying on the relevance of MSH research to public health is needed, especially in the face of an ageing population and the prevalence of low back and neck pain.

In the merger to Amsterdam Public Health institute, the current plan is that parts of the MusculoSkeletal Health program will morph into two new programs (Methodology, Social Participation and Health) and will develop new collaborations with MOVE. This clearly has implications, and raised some concerns, particularly relating to the viability and visibility of this current long-standing program. As MSH is a highly relevant topic in public health research, the committee wants to emphasize that the visibility must be secured. Rather than separation into the new contemplated programs the committee advises to continue the further development of this group as a whole.

Quantitative assessment of the MusculoSkeletal Health program

Quality	1	Excellent
Relevance to society	1	Excellent
Viability	2	Very good

Quality of Care

The Quality of Care program consists of three themes: Health communications and decision making; disease, disability and participation; effectiveness and safety of care. The structure of this program differs from the other three-disease-oriented programs in its strong emphasis on patient-perspectives and its crosscutting themes. Research output is excellent with a high number of highly cited publications, and a high volume of invited lectures, prizes and awards. These achievements have been facilitated by stable core staff and there is an expanding cohort of PhD students and a doubling of external funding. The program has diversified their funding and has acquired significant EU grants.

The program leaders have a clear publication and funding strategy and have demonstrated the ability to critically reflect on previous recommendations, which have been well implemented. Whilst the researchers working in this program can be very proud on their achievements, the committee felt they could give greater emphasis to how they present and articulate their high international status and research capabilities.

The research has high societal impact with many contributions to directives, protocol and policy notes. There is an opportunity for the investigators to use more datasets from other research groups, including electronic medical data.

The merger with the public health research of the AMC into the new Amsterdam Public Health institute is seen by the program leaders as an opportunity to increase the playing fields in health care, shift topics and increase collaborations. Part of the research will move into the new program Ageing & Later Life, while the rest will remain under the new Quality of Care program. This opens opportunities to expand the QoC research on multimorbidity as this will be a major challenge for care in the ageing population. They also plan to collaborate more with the new Methodology program, which should improve their link to health economics research.

Quantitative assessment of the Quality of Care program

Quality	1	Excellent
Relevance to society	1	Excellent
Viability	1	Excellent

PhD program

The EMGO⁺ has a large PhD program. 277 PhD students were enrolled in 2015 with an excellent graduation record. The PhD programme follows the VU/VUmc guidelines for dissertation and course work. Course work is in part obligatory and in part gives the freedom to adjust to the needs of the PhD student. PhD students are selected via a job interview in competition with other candidates and are considered as employees who are entitled to receive teaching. EMGO⁺ also has a very innovative embedded PhD track to create public-private partnerships in PhD training.

The quality of the PhD track and the resulting theses are high. The quality of the project is reviewed by the Scientific Committee at the start and the PhD Committee is involved in the education, supervision and assessment of the training progress PhD student.

As observed and recommended by the former committee and noted by EMGO⁺ in their SWOT, the ratio of PhD students to staff is still out of balance. The growing number of PhD students has resulted in a high demand on staff to supervise these students. It is now crucially important for the senior researchers to make strategic decisions regarding what is manageable.

In view of the merger, the PhD Committee expects that they can maintain their work, as it is highly comparable with the AMC, and can integrate their experience on quality control and guidance of the PhD students with the model at the AMC. The different doctorate regulations of both universities are seen as a future challenge in aligning the two programmes. The committee recognizes the excellent work of the PhD Committee and wants to emphasize the importance of maintaining this high quality level in the future merger to create Amsterdam Public Health Institute.

To function as an internationally recognised institute, EMGO⁺ has to be attractive to foreign researchers and be able stimulate the mobility of their own researchers. EMGO⁺ offers teaching courses and public meetings in English and peer discussion groups for international PhD students. Mobility is supported by travel grants for PhD students, allowing them the opportunity to work for some weeks abroad. This provides students with a valuable experience as well as strengthening EMGO⁺ collaborations with other institutes. The committee is impressed with this structure and procedures and recommends that they should be retained in the new institute.

Career after PhD

Of all graduating PhD students between 2010 and 2015, 46% ended up pursuing research careers. This proportion could be improved and the committee suggested a target of above half, around 60-70%. That said, the committee acknowledges the general reality of the moderate research career prospects for the PhD students and recognizes the effort being made to increasing the numbers who pursue a post doc career such as:

- The success of EMGO⁺ researchers in acquiring EU consortium grants. This funding mechanism allows more flexible spending to employ more postdocs on projects, as they are better skilled for collaborative projects than PhD students. Incentivize to invest in senior staff.
- Successful implementation of more EMGO⁺ postdoctoral fellowships provides opportunities for postdocs to spend time improving their cv's by writing papers and grants. The committee met some successful fellows who received prestigious personal grants to further pursue their research career. This incentive should remain and even be extended within the larger institute.
- The program leadership is advised to further lobby, in collaboration with other leading national research groups to reform funding at the post doc level, now the Dutch government is reducing its support and funding for successfully finalized PhD theses.

The committee is impressed with this strategy and recommends that it will be retained in the new institute.

Research integrity

EMGO⁺ has two committees in place to monitor research integrity.

New research projects affiliated with the institute are reviewed in terms of quality and fit with the institute's mission by the Science Committee. Without approval the project cannot start under the governance of the EMGO⁺ Institute.

Research quality and integrity issues are discussed at the Quality Committee, which advises the Executive Board of the EMGO⁺ Institute. Quality improvement procedures and research integrity oversight are outstanding and the Committee conducts regular audits and maintains a web-based EMGO⁺ quality manual.

The committee is impressed by the functioning of the Science Committee and the Quality Committee. They recommend that these structures are kept in place in the new Public Health Institute.

Recommendations

The external evaluation committee is impressed by the high quality of research, the organization of the institute and its relevance to society through its work in an extramural setting. The main recommendations, taking into account the future merger into the new larger Public Health Institute, are summarized below.

- 1) The merger of EMGO⁺ and AMC's public health research to create a new larger Amsterdam Public Health Institute will require strong leadership, not only from the top of management but also from (senior) researchers. It is, therefore, recommended that the Institute should invest in the leaders of tomorrow. The EMGO⁺ strategy to strengthen the careers of post-docs provides an important avenue for this.
- 2) The institute should establish a focused strategy for research goals of the new Public Health Institute for the coming 5 years. Early decisions in setting priorities are needed to continue to build an institute on focus.
- 3) The tight supervision EMGO⁺ has developed in the organization and quality control of its research should be maintained without compromise in the Amsterdam Public Health Institute.
- 4) A policy should be put in place to monitor the buildup of the research profiles within the institute, especially to secure a better balance between PhD students and staff. It is recommended that EMGO⁺'s policy of embedded PhDs and fellowships for postdocs should be continued and expanded to incentivize projects hiring postdocs. In this context, a policy is recommended to retain clinicians with research background as senior researchers in the program.

The main recommendations for the individual EMGO⁺ programs within the Amsterdam Public Health Institute are:

For the LOD program: preserve focus with a critical reflection on the current and future program breadth of ambition.

For the Mental Health program: maintain their strong research lines and adaptability to new opportunities.

For the MSH program: assure the visibility of musculoskeletal health research in the new Public Health Institute.

For the QoC program: improve how they articulate their international status and research capabilities.

Appendix 1 - Explanation of the categories from SEP 2015-2021

Category	Meaning	Research quality	Relevance to society	Viability
1	World leading/ excellent	The research unit has been shown to be one of the few most influential research groups in the world in its particular field.	The research unit makes an outstanding contribution to society.	The research unit is excellently equipped for the future.
2	Very good	The research unit conducts very good, internationally recognised research.	The research unit makes a very good contribution to society.	The research unit is very well equipped for the future.
3	Good	The research unit conducts good research.	The research unit makes a good contribution to society.	The research unit makes responsible strategic decisions and is therefore well equipped for the future.
4	Unsatisfactory	The research unit does not achieve satisfactory results in its field.	The research unit does not make a satisfactory contribution to society.	The research unit is not adequately equipped for the future.

Appendix 2 - Short CVs of the committee members

Prof. Chris van Weel (chair), Emeritus Professor of Family Medicine/General Practice at Radboud University Nijmegen in The Netherlands, Professor of Primary Health Care Research at the Australian National University in Canberra, Australia and Past President of WONCA; *Research focus:* Chronic health problems in primary health care: Asthma, COPD, Diabetes mellitus, depression, arthritis, multi-morbidity/co-morbidity, early interventions, long-term outcome; primary health care policy implementation.

Prof. Elaine Hay, Professor of Community Rheumatology, Keele University, UK and director of Primary Care and Health Sciences; *Research focus:* leads a multidisciplinary research institute focusing on musculoskeletal and mental health; particular experience in large, primary care pragmatic randomized trials.

Prof. Sidney Kennedy, Professor of Psychiatry and Chair of Depression and Suicide studies, University of Toronto, Canada and lead investigator for the Canadian Biomarker Integration Network for Depression; *Research focus:* Neurobiology of Mood Disorder; Psychopharmacology and neurostimulation therapies; Biomarkers to predict treatment response.

Prof. Frank Sullivan, Director Scottish School of Primary Care and the NHS Tayside, UK, Professor of Research and Development in General Practice and Primary Care, University of Dundee, Research Professor, University of Toronto; *Research focus:* Health problems in primary health care: Diabetes mellitus, Lung cancer, Bell's palsy, multi-morbidity/co-morbidity, long-term outcome. Methodology: Health Informatics and clinical trials in community settings.

Prof. Viola Vaccarino, Professor and Chair of the Department of Epidemiology, Rollins School of Public Health, Emory University, US with a joint appointment in the Department of Medicine, Division of Cardiology, Emory University School of Medicine; *Research focus:* Cardiometabolic health; cardiovascular epidemiology; interconnections between mental and physical health; women's health

Prof. Nick Wareham, Director of the MRC Epidemiology Unit, University of Cambridge, UK, co-Director of the Institute of Metabolic Science. *Research focus:* Epidemiology, Public Health, Prevention, Aetiology, Diabetes, Obesity, Lifestyle

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

Appendix 3 – Site visit program

October 2

19.00 – Welcome Dinner at Roberto's Restaurant at the Hilton Amsterdam Hotel (*committee members with Prof. Eco de Geus, PhD, director EMGO⁺*)

Site Visit Day 1 – October 3 (location: Forumzaal 2, Vrije Universiteit)

08.30 – 09.30 Breakfast meeting at VU campus (*committee members only*)

- Chair explains procedures and tasks of the committee

09.30 – 10.30 Opening session with the EMGO⁺ Board ([Prof. Eco de Geus, PhD](#), [Prof. Willem van Mechelen, MD, PhD](#), [Prof. Brenda Penninx, PhD](#))

- Introduction Dutch research landscape ~10 min
- Overview EMGO⁺ institute ~20 min
- Practical issues site visit program ~5 min
- Questions & discussion

10.30 – 14.30 Presentation of the four interdisciplinary research programs

Following a short introduction by the two program directors, two representatives of the program will briefly describe a recent (or ongoing) research project. We end with an open interview by the committee with the four program members.

10.30 – 11.15 Lifestyle, Obesity and Diabetes (LOD)

Prof. Mai Chin A Paw, PhD , Prof. Ingeborg Brouwer, PhD & Prof. Marjolein Visser, PhD	Program directors' view on the program
Hidde van der Ploeg, PhD	Long term impact evaluation of a worksite-based lifestyle intervention to reduce imaging characterized-cardiovascular risk in office workers
Maartje van Stralen, PhD	Building a relapse prevention model in weight loss maintenance

11.15 – 12.00 Quality of Care (QoC)

Prof. Sophia Kramer, PhD , Martine de Bruijne, PhD & Prof. Bregje Onwuteaka-Philipsen, PhD	Program directors' view on the program
Lidewij Henneman, PhD	Implementation of Non-Invasive Prenatal Testing in the Netherlands
Emiel Hoogendijk, PhD	Frailty in older adults: the Longitudinal Aging Study Amsterdam

12.00 – 13.00 Lunch (*committee members only*)

13.00 – 13.45 MusculoSkeletal Health (MSH)

Prof. Raymond Ostelo, PhD & Prof. Allard van der Beek, PhD	Program directors' view on the program
Evert Verhagen, PhD	The prevention of sports related injuries
Hanneke van Dongen, PhD	Decision tool for chronic low back pain patients

13.45 – 14.30 Mental Health (MH)

Prof. Pim Cuijpers, PhD , Prof. Patricia van Oppen, PhD & Prof. Brenda Penninx, PhD	Program directors' view on the program
Femke Lamers, PhD	Melancholic and atypical depressive subtypes: Relevance to pathophysiological mechanisms and genetic research
Ellen Driessen, PhD	Is the efficacy of psychotherapy for depression overestimated due to publication bias?

14.30 – 15.30 Walk around the campus / coffee & tea break**15.30 – 17.00 Interview session: perspectives of senior, mid-career, and junior researchers**

Six EMGO⁺ postdocs/assistant professors briefly introduce themselves to the committee that will ask them to reflect on their current scientific work and their career perspectives. Next three EMGO⁺ mid-careers/associate professors briefly introduce themselves to the committee that will ask them to reflect on the scientific work of their group, the research institute tradition and EMGO⁺, and their research plans for the coming years. Finally two EMGO⁺ full professors briefly introduce themselves to the committee that will ask them to reflect on the scientific work and acquisition of their department/section, the research institute tradition at VU/VUmc and EMGO⁺, and their research & acquisition strategy for the coming years.

- 15.30 - 16.10 Postdocs and assistant professors
([Jenny van Dongen, PhD](#), [Corline Brouwers, PhD](#), [Yuri Milaneschi, PhD](#), [Wieneke Mokkink, PhD](#), [Marije Verhage, PhD](#), [Laurien Buffart, PhD](#))
- 16.10 - 16.35 Associate professors
([Cécile Boot, PhD](#), [Adriana Zekveld, PhD](#), [Joline Beulens, PhD](#))
- 16.35 – 17.00 Full professors
([Prof. Han Anema, PhD](#) & [Prof. Bregje Onwuteaka-Philipsen, PhD](#))

17.00 – 17.30 Amsterdam Public Health : long-term viability of the EMGO⁺ research community

The EMGO⁺ director briefly explains ongoing actions and general strategy for the transition of EMGO⁺ to the Amsterdam Public Health Institute (APH), followed by a description of the research programs of the APH by the codirectors of the APH ([Prof. Eco de Geus, PhD](#) & [Prof. Judith Sluiter, PhD, MBA](#)) The committee then interviews the APH codirectors on e.g. the viability of the APH in the national and international trends in health care research.

- 17.30** **Transfer campus to hotel**
19.00 **Dinner at Bolenius** (*committee with EMGO⁺ Board and EMGO⁺ key opinion leaders*
*[Prof. Henriëtte van der Horst, MD, PhD](#), [Prof. Pim Cuijpers, PhD](#), [Otto Maarsingh, PhD](#),
[Prof. Jaap Seidell, PhD](#), [Prof. Allard van der Beek, PhD](#), [Prof. Marjolein Visser, PhD](#))*

Site Visit Day 2 – October 4 (location: De Waver, VU Medical Center)

- 08.15** **Breakfast at hotel, transfer from hotel to campus**

- 09.00 – 09.45** **Discussion with the Board of Deans** (*Prof. Chris Polman, MD, PhD (VU Medical Center), Prof. Nico van Stralen, PhD (VU Earth and Life Sciences), Prof. Peter Beek, PhD (VU Behavioral & Movement Sciences)*)

09.45 – 10.45 **Quality control & research integrity**

The EMGO⁺ Institute has two core committees in research quality monitoring, i.e. the EMGO⁺ Quality Committee and the EMGO⁺ Science Committee. Both committees will give a 10 min presentation each on their modus operandi allowing 20 min for open discussion about e.g. research integrity in EMGO⁺ with the committee.

- 09.45 – 10.15 Science Committee (*[Frederieke Schaafsma, PhD](#) & [Teatske Altenburg, PhD](#)*)
 10.15 – 10.45 Quality Committee (*[Michel Paardekooper, PhD](#) & [Agnes Willemen, PhD](#)*)

10.45 – 12.15 **PhD program**

The EMGO⁺ PhD committee will give a 10 min presentation on their modus operandi allowing 20 min for open discussion about e.g. PhD training and education and formal monitoring of the PhD trajectory. Nine PhD students then present their ongoing work to the committee in a pecha kucha format. The PhD Students remain present during lunch for informal exchanges with the committee.

- 10.45 – 11.15 PhD Committee
([Ruth van Nispen, PhD](#), [Marjan Westerman, PhD](#), [Catherine Black, MD](#) & [Nicole den Braver, MSc](#))
- 11.15 – 12.15 Pecha Kucha's PhD students
([Joreintje Mackenbach, MSc \(LOD\)](#), [Simon Provoost, MSc \(MH, embedded at Mind Design\)](#), [Rosa Boeschoten, MSc \(MH\)](#), [Ankie Seiger, MSc \(MSH\)](#), [Myrte Westerneng, MSc \(QoC\)](#), [Suzan Wiertsema, MSc \(MSH\)](#), [Anita Romijn, MSc \(QoC\)](#), [Coosje Dijkstra, MSc \(LOD\)](#), [Klaas-Jan Ouwens, MSc \(MH/LOD, embedded at Genalice\)](#)).

12.15 – 13.15 **Lunch with the PhD students**

13.15 – 14.00 **International collaboration**

Four senior EMGO⁺ members describe our participation in large international consortia, three junior members describe their work abroad using an EMGO⁺ travel grant and two foreign employees can directly compare the EMGO⁺ experience to the research climate in their countries of origin.

- [Prof. Ingeborg Brouwer, PhD \(MOODFOOD\)](#), [Prof. Heleen Riper, PhD \(TRIPLE-E\)](#), [Hein van Hout, PhD \(Interdem, InterRAI\)](#), [Femke van Nassau, PhD \(EUROFIT\)](#)
- [Hilde van der Aa, PhD](#), [Spyros Kolovos, MSc](#), [Esi van der Zwan, MSc](#) (travel grants)
- [Alessandro Chiarotto, MSc](#), [Camelia Minica, PhD](#) (international staff)

14.00 – 14.45 Societal relevance

Two senior EMGO⁺ scientists provide examples of how EMGO⁺ researchers contribute to the formulation of national guidelines for Dutch health care, one senior EMGO⁺ scientist provides an example of collaborating with health care professionals in a regional expertise center and consortium, and two senior EMGO⁺ physicians/scientists provide examples of Academic Collaborative Centers (ACC). This is followed by an open discussion with the committee.

- [Prof. Marjolein Visser, PhD](#) (Guideline Healthy Diet)
- [Nettie Blankenstein, MD, PhD](#) (Multidisciplinary and GP guidelines on Medically Unexplained Physical Symptoms)
- [Prof. Aartjan Beekman, PhD](#) (ACC Psychiatry)
- [Mariëtte Hoogsteder, PhD](#) (ACC Youth and Health)

14.45 – 15.15 Coffee & tea break**15.15 – 17.00 Closed committee meeting; writing draft report****17.00 – 18.00 Drinks & appetizers**

Initial confidential oral feedback to the EMGO⁺ Board

18.00 Transfer campus to Hotel

Appendix 4 – Composition and financing of EMGO⁺

Table 1 - Total research FTE for the institute and per program

An overview of the research FTE of the EMGO⁺ Institute from 2010 to 2015 is listed in Table 1.

Scientific core staff includes professors, associate professors, assistant professors. Other scientific staff includes senior researchers, postdocs and junior researchers. PhD students consist of standard PhDs (employed) and contract PhDs (externally or internally funded, but not employed).

EMGO ⁺	2010	2011	2012	2013	2014	2015
Scientific core staff *	74,0	74,9	63,8	74,5	60,9	61,7
PhD students	109,4	117,3	133,8	138,4	136,4	139,2
Other scientific staff	101,7	99,4	101,1	101,9	113,9	131,1
Total research staff	285,0	291,5	298,7	314,8	311,3	331,9

Lifestyle, Overweight and Diabetes	2010	2011	2012	2013	2014	2015
Scientific core staff	16,3	15,5	16,1	20,0	11,4	8,8
PhD students	26,3	23,8	21,1	22,2	26,7	26,4
Other scientific staff	29,6	31,3	23,2	23,6	28,4	31,4
Total research staff	72,2	70,6	60,4	65,8	66,5	66,6

Mental Health	2010	2011	2012	2013	2014	2015
Scientific core staff	22,7	22,6	22,5	24,7	25,0	25,7
PhD students	45,8	53,1	46,2	49,1	57,4	65,0
Other scientific staff	28,7	19,8	33,3	29,2	38,7	44,3
Total research staff	97,2	95,5	102,0	102,9	121,2	134,9

Quality of Care	2010	2011	2012	2013	2014	2015
Scientific core staff	19,3	22,5	14,3	19,4	16,9	18,6
PhD students	20,0	20,7	42,7	41,0	36,2	38,3
Other scientific staff	27,5	36,1	36,1	41,4	36,7	42,8
Total research staff	66,8	79,3	93,1	101,9	89,8	99,7

Musculoskeletal Health	2010	2011	2012	2013	2014	2015
Scientific core staff	15,7	14,2	10,9	10,4	7,6	8,5
PhD students	17,3	19,7	23,8	26,1	16,1	9,6
Other scientific staff	15,8	12,3	8,6	7,7	10,1	12,6
Total research staff	48,9	46,2	43,2	44,2	33,8	30,7

* In the previous Standard Evaluation Protocol (2009-2015) that was used in the annual reports 2009-2013, a distinction in the job categories was made between: i) tenured staff (professors, associate professors, assistant professors and senior researchers); and ii) non-tenured staff (junior researchers and postdocs). The numbers in this Table from the years 2009-2013 still correspond with this approach (tenured staff – scientific core staff / non-tenured staff – other scientific staff). In the 2015-2021 SEP (the protocol used in the 2014 and 2015 annual report) senior researchers are listed in the job category 'other scientific staff', explaining the increase in this category and the parallel decrease in FTE in scientific core staff.

Table 2 - Sources of funding of the research staff for the institute and per program (in FTE's)

EMGO ⁺ institute	2010	2011	2012	2013	2014	2015	2015 (%)
Direct funding	86,8	80,9	74,6	79,3	81,5	90,4	27%
Research staff: Research grants (RG)	89,8	93,3	81,6	83,1	92,0	87,3	26%
Research staff: Contract research (CR)	99,8	112,5	137,3	148,1	131,3	149,6	45%
Research staff: Other funding (OF)	8,6	4,8	5,3	4,3	6,4	4,7	2%
External funding (total RG + CR + OF)	198,3	210,6	224,1	235,5	229,8	241,6	73%
Total internal+external	285,0	291,5	298,7	314,8	311,3	331,9	100%

Lifestyle, Overweight and Diabetes	2010	2011	2012	2013	2014	2015	2015 (%)
Direct funding	23,9	20,2	22,5	20,7	14,5	16,6	25%
Research staff: Research grants (RG)	17,2	20,6	13,8	14,3	16,1	13,9	21%
Research staff: Contract research (CR)	24,7	27,6	22,5	29,9	32,8	34,4	51%
Research staff: Other funding (OF)	6,4	2,2	1,6	0,9	3,1	1,7	3%
External funding (total RG + CR + OF)	48,3	50,4	37,9	45,2	52,0	50,1	75%
Total internal+external	72,2	70,6	60,4	65,8	66,5	66,6	100%

Mental Health	2010	2011	2012	2013	2014	2015	2015 (%)
Direct funding	29,7	29,3	23,7	29,4	34,8	39,5	29%
Research staff: Research grants (RG)	39,5	40,7	38,8	39,0	51,6	52,0	38%
Research staff: Contract research (CR)	27,5	25,3	38,7	34,5	34,3	42,6	32%
Research staff: Other funding (OF)	0,6	0,2	0,8	0,0	0,5	0,9	1%
External funding (total RG + CR + OF)	67,5	66,2	78,3	73,5	86,4	95,4	71%
Total internal+external	97,2	95,5	102,0	102,9	121,2	134,9	100%

Quality of Care	2010	2011	2012	2013	2014	2015	2015 (%)
Direct funding	12,7	11,9	14,6	13,5	16,6	21,3	22%
Research staff: Research grants (RG)	21,8	21,6	18,0	21,0	18,6	18,1	18%
Research staff: Contract research (CR)	30,6	43,3	57,7	64,0	51,8	58,2	58%
Research staff: Other funding (OF)	1,6	2,4	2,8	3,4	2,8	2,1	2%
External funding (total RG + CR + OF)	54,1	67,3	78,5	88,3	73,3	78,4	78%
Total internal+external	66,8	79,3	93,1	101,9	89,8	99,7	100%

Musculoskeletal Health	2010	2011	2012	2013	2014	2015	2015 (%)
Direct funding	20,5	19,5	13,8	15,7	15,7	13,0	42%
Research staff: Research grants (RG)	11,3	10,4	11,0	8,8	5,7	3,3	11%
Research staff: Contract research (CR)	17,0	16,3	18,4	19,7	12,4	14,4	47%
Research staff: Other funding (OF)	0,0	0,0	0,0	0,0	0,0	0,0	0%
External funding (total RG + CR + OF)	28,4	26,7	29,4	28,5	18,1	17,7	58%
Total internal+external	48,9	46,2	43,2	44,2	33,8	30,7	100%