# Recognition & Rewards

Perspectives from a clinician researcher viewpoint

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# 1 Summary (English)

The realisation of the ambitions shared by Dutch academia and described in the position paper "Room for everyone's talent" requires an updating of the academic 'Recognition and Rewards' system. Being perhaps one of the biggest culture transformations in academia in the last decades, this should lead to improving the quality of each of the strategic tasks: education, research, societal impact, leadership and, for academic hospitals, patient care. University Medical Centres (UMCs) distinguish themselves from other university faculties by combining a medical faculty with an academic hospital. In a UMC, a subset of employees combines their clinical patient care duties with other academic tasks. To understand the clinician researcher<sup>1</sup> perspective towards Recognition and Rewards, their career and scientific opportunities, as well as the challenges that present themselves in the context of a UMC, the NFU requested advice from the UMC research policy advisors working group. The aim is to make target group-specific recommendations to the VSNU and to local university committees tasked with developing and implementing new Recognition and Reward policies.

Discussions within the UMCs resulted in a set of observations in five categories: (i) PhD & medical specialisation, (ii) allocated time for core tasks, (iii) team spirit, (iv) academic career progression and support and (v) evaluation criteria. Examples of current practices regarding Recognition and Rewards policies were collected from all UMCs. The input was translated into a set of recommendations for all UMCs, which can be broadly summarized as follows. For detailed recommendations, please refer to the body of the report.

- Offer support for personal career planning at an early stage and enhance flexibility in career (training) paths for clinicians with the ambition and talent to pursue an academic career.
- A pivotal change involves developing and implementing policies to make explicit agreements about dedicated time for core tasks, thereby acting on the ideal that care, research and education are equally important.
- Create departmental strategic talent management plans for transparent decision-making, taking into account the diverse nature of teams, individual skills and competences.
- Initiate a culture based on team spirit in which everybody's contribution to the primary tasks, including research and education, is visible and valued within the team.
- Differentiate between tasks and career paths with profiles based on: the medical specialist who is an excellent physician in patient care; the educator/lecturer; the clinician scientist; department management.
- Apply a portfolio/cv for academic promotions based on team science practices, a broad spectrum of academic impact, a combination of qualitative and quantitative assessment criteria, and clear and transparent procedures.
- Develop policies to ensure that the quality of the PhD research training becomes central in academia.

1 As a disclaimer, it should be noted that for the readability of the document it has been chosen to use clinician/clinician researcher but based on the context it can also be read as clinician educator.

## Samenvatting (Dutch)

Het realiseren van de gemeenschappelijke academische ambities in Nederland, zoals beschreven in het position paper "Ruimte voor ieders talent", vereist modernisering van het academische "Erkennen en Waarderen" systeem. Deze cultuuromslag is mogelijk een van de grootste in de academische wereld in de afgelopen decennia en moet leiden tot verbetering van de kwaliteit op elk van de strategische taken: onderwijs, onderzoek, maatschappelijke impact, leiderschap en, voor academische ziekenhuizen, patiëntenzorg. Universitair medische centra (umc's) onderscheiden zich van andere universitaire faculteiten door de combinatie van een medische faculteit met een academisch ziekenhuis. Voor een deel van de medewerkers in een umc geldt dat zij klinische taken combineren met andere academische taken. Om inzicht te krijgen in het perspectief van clinici met onderzoekstaken op Erkennen en Waarderen, loopbaanmogelijkheden en de uitdagingen die zich in de context van een umc voordoen, heeft de NFU advies gevraagd aan de beleidsadviseurs onderzoek van de umc's. Het voor u liggende verslag biedt een overzicht van doelgroep-specifieke aanbevelingen ten behoeve van de VSNU en lokale universitaire commissies die belast zijn met de ontwikkeling en implementatie van nieuw beleid op het gebied van Erkennen en Waarderen.

Focusgroepgesprekken in de umc's hebben geleid tot observaties op vijf terreinen: (i) PhD & medische specialisatie, (ii) Toegewezen tijd voor kerntaken, (iii) Team spirit, (iv) Academische loopbaanontwikkeling en ondersteuning, en (v) Evaluatiecriteria. Bovendien werden van alle umc's voorbeelden verzameld van huidige praktijken op het gebied van Erkennen en Waarderen. De input is vertaald in een aanbevelingen voor alle umc's, die als volgt samengevat kunnen worden:

- Bied vroegtijdige ondersteuning voor individuele loopbaankeuzes en verbeter de flexibiliteit in opleidingen en loopbaanpaden voor clinici met ambitie en talent voor een academische carrière.
- Een belangrijke verbetering is de ontwikkeling van beleid om expliciete afspraken te maken over de toekenning van werktijd voor alle kerntaken, waarbij het uitgangspunt is dat de taken patiëntenzorg, onderwijs/opleiding en onderzoek allen even belangrijk zijn.
- Ontwikkel afdelingsplannen voor talentbeleid ten behoeve van transparante besluitvorming, rekening houdend met diversiteit in teams, individuele vaardigheden en competenties.
- Initieer een cultuur gebaseerd op team spirit, waarin ieders bijdrage aan de primaire taken, waaronder onderzoek en onderwijs, zichtbaar is en gewaardeerd wordt.
- Differentieer tussen taken en carrièrepaden op basis van de volgende profielen: medisch specialist met excellente kwaliteiten voor de patiëntenzorg; docent/opleider; arts-onderzoeker; afdelingsmanagement.
- Gebruik een portfolio/cv voor academische promoties gebaseerd op team science praktijken, een breed spectrum van impact van onderzoek, combinatie van kwalitatieve en kwantitatieve beoordelingscriteria, en heldere en transparante procedures.
- Ontwikkel beleid om de kwaliteit van de promotieopleiding centraal te stellen binnen de academie.

### 2 Aim

The VSNU, NFU, KNAW, NWO & ZonMw initiative 'Recognition & Rewards' resulted in 2019 in the publication of a position paper entitled, "Room for everyone's talent". It aims to stimulate a culture change in how we collectively value academics and academic tasks by highlighting five pillars for attention: (i) diversification and vitalisation of career paths, (ii) balance between individual and collective, (iii) focus on quality, (iv) stimulation of open science and (v) academic leadership. Universities, including their medical faculties, have been given the assignment to develop an overarching vision, new policies and practices to meet the goals set out in the position paper.

University Medical Centres (UMCs) distinguish themselves from other faculties by combining a medical faculty with an academic hospital. This results in a unique combination of clinical and nonclinical research that facilitates translational research from molecule-to-human and population, and vice versa. A significant subset of UMC employees combines clinical duties (typically 80% of time) and other academic tasks, including research and education. Due to this exclusive character of the UMCs, the NFU initiated a subproject of Recognition and Rewards to specifically address the clinician researcher<sup>2</sup> perspective. Three research policy advisors of the UMCs were asked to investigate this topic and to make recommendations based on their views and research career experiences. It is the explicit intention of this report that all recommendations and current practices collected by the UMCs for the NFU can and should be used as input for the VSNU and local university committees tasked with developing and implementing new 'Recognition & Reward' policies.

<sup>2</sup> As a disclaimer, it should be noted that for the readability of the document it has been chosen to use clinician/clinician researcher but based on the context it can also be read as clinician educator.

# 3 Approach

Ten focus group discussions, each comprising 5-12 clinicians in various phases of their career and involved in research or education tasks, were conducted at five UMCs: Amsterdam UMC, Erasmus MC, LUMC, Radboudumc and UMCG. The participants' overview is included in Appendix 5.1 as an important sign of recognition of their enthusiasm and time investment in this project.

Members of the focus groups received a set of pre-determined questions before each meeting, specifically focussing on the aspects i), ii) and iii) mentioned in the previous section, and addressing e.g. barriers in combining specialist medical training with research, and their views on career outlook, support and mentoring. The focus group discussions also aimed at identifying solutions and collecting current practices from the UMCs regarding these topics. The questions can be found in Appendix 5.2. The discussions were led by one of the authors of this paper or a senior clinician researcher. All input was compiled to generate insight into shared experiences and underlying problems that were put forward as well as policy recommendations to tackle these issues (Chapter 4). We identified five topic categories: (i) PhD & medical specialisation, (ii) allocated time for core tasks, (iii) team spirit, (iv) academic career progression and support and (v) evaluation criteria.

The remaining two UMCs (MUMC+ and UMCU) provided input in the form of current practices which were bundled with examples of such practices in the other UMCs (Appendix 5.3).

# 4 Findings and recommendations

Although it was not specifically discussed during the focus group meetings, all of the clinician researchers we talked to were highly appreciative of the unique multidisciplinary setting of a UMC for conducting translational research from bench to bedside and vice versa based on complex questions arising from actual cases. Clinicians working at a UMC, as compared with peripheral hospitals, are more likely to have access to state-of-the-art technologies plus existing and ongoing patient cohorts, or be in a position to gain access to unique clinical and population studies. The combination and variety of clinical duties with management, education and/or research can give doctors a head start in their career. This document, whilst focusing on the aspects of a clinician researcher career path that could be improved, should not distract from the many opportunities a UMC and the NFU offer.

#### 4.1 PhD & medical specialisation

#### Findings:

The clinical researcher career path is a rocky road requiring dedication and ambition. At an early career stage, it is challenging to understand the various options, their planning and consequences. The career steps taken by the clinicians participating in the focus group discussions were very intentional in some cases, but not in a substantial number of cases, choices often being dependent on the available ad hoc opportunities without any clear career planning. In particular, the sequence of medical specialisation and PhD and the choice of the PhD topic, if not in combination, stood out as points worthy of attention. From both a personal and departmental perspective, it is felt that too little attention is paid to young clinicians to help them make optimal career choices, taking into account their personal ambitions, situation and possibilities.

Two types of career path were identified: (i) first completion of a PhD (possibly in combination with medical internships) followed by medical specialisation; or (ii) a combination of the medical specialisation with a PhD project. Several positive experiences as well as some bottlenecks were mentioned, which result in additional challenges when building a research career as a clinician.

- Entering medical specialisation after obtaining a PhD:
  - The clinician has the advantage of being able to focus fully on the research topic and research skills prior to the medical specialisation;
  - However, the PhD research topic is not always in line with research interests during/after specialisation;
  - This route has the disadvantage that medical specialisation hampers the continuity in research experience and keeping up with developments in the chosen research field due to lack of time. This gap is disadvantageous for picking up the research career after finishing the specialisation, in particular in relation to acquiring external funding, like a Veni;
  - In some cases, a doctorate is primarily a 'prerequisite' for obtaining a placement on a medical specialisation/training program. The question was raised of why it has become the norm that medical specialists need to hold a PhD, irrespective of their career within or outside an academic hospital.

- Combination of a PhD project with the medical specialisation:
  - Has the advantage of alignment with the topic of the medical specialisation;
  - However, it was often felt that the combination of research and specialization may lead to less scientific depth in the research project;
  - Combination of these paths can also lead to situations with conflicting interests towards the various tasks (patient care vs. research/education) and supervisors;
  - Some participants experienced support and flexibility among supervisors to make the combination work, but this may depend on the medical discipline or supervisor. The AIOTHO format for physicians combining their general practitioner training with a PhD project was mentioned as a best practice (Appendix 5.3);
  - Several participants positively referred to the former AGIKO program, which facilitated a balanced combination of PhD research with the medical specialisation. In contrast, others felt the combination was too heavy, which was thought to be the reason why the program was stopped by ZonMw.

#### **Recommendations:**

- UMCs:
  - Since medical fields and personal interests differ widely, the various routes for starting an academic career were appreciated, i.e. PhD & medical specialisation performed in combination or subsequently. **Offering more flexibility and allowing personal choices in career (training) paths** are relevant for clinicians with the ambition and talent to pursue an academic career.
  - If a combination of medical specialisation and PhD research is proposed, it is **recommended to make starting agreements** about time and task allotment between the candidate, the department, and the research and medical training supervisors, and to regularly evaluate and adjust these agreements. **Training and supervision plan (TSP)** has been listed as an excellent tool to make the abovementioned agreement transparent for all actors. In the case of a sequential process (first PhD, then specialisation or vice versa), it allows a clear contribution to patient care tasks. It also facilitates planning, mentoring and consultation between the clinical specialism and PhD supervisors.
  - Information and guidance for career planning needs to be provided at an early career stage, allowing young talents to make informed career choices. The UMCs need to make sure that talented and ambitious clinician researchers are identified early on and that career guidance tools/programmes are made available in the most suitable way to facilitate academic career development.
  - **Implement structured support**, such as a mentor program, coaching, peer-group learning, etc., from early on (even in the master phase of their study), focused on clinicians to facilitate their choices and introduce role models. The benefit of these tools and programmes may be broader if they are offered to all academics.
- NFU:
  - Start a discussion within the NFU/UMCs to investigate whether every academic/university medical specialist needs to have a PhD.
  - Formulate a statement on the prerequisite for holding a PhD for entering a medical training

and reach an agreement on this with CCMS (Centraal College Medisch Specialisten).

- Investigate the possibility to (re)initiate an AGIKO programme.

#### 4.2 Allocated time for core tasks

#### Findings:

Within a UMC setting, research is legally defined as a core task. Translation of research from molecule to human and vice versa is not something to be done as a hobby in one's spare time. Broadly speaking, clinician researchers fall into two categories: those with dedicated research/ education time and those with no agreement on how to combine these tasks with clinical duties.

- Clinician researchers are appointed to fulfil a dual function, patient care and academic tasks like research and/or education. Yet often there are no formal agreements as to how much time is available for research in the context of an academic position. In practice, patient care and education tasks take priority, and the time available for research is reduced accordingly. If no agreements have been made as to the division of time and tasks, clinician researchers are faced with two options: (i) research is performed out-of-office hours, including the weekend, or (ii) they opt for a 4-day week so as to create extra time for research (unpaid). Both examples are on-going practices arising from a system failure, leading to unwarranted working conditions, practices and unfair competition with those researchers who do have allocated time agreements for core tasks. Only a small minority of the participants we spoke to appeared to have dedicated research time, often 0.2-0.4 fte, and therefore have structurally more time for performing research (setting up/ leading a research group, writing research proposals, etc.).
- The allocation of dedicated time for research is in many cases decentralised policy, often dependent on the policy of the clinician's department, available budget and priorities.
   Differences between disciplines within a single institution and between institutions are apparent and undesirable as they create an unequal status for the clinician researcher.
- The stakeholders to whom we spoke also noted that in some cases, educational duties were more highly regarded [than research] by a department simply because education quite literally pays (as part of the internal financial system of the regular curriculum); put simply: performing research costs money and teaching earns money. This depends on the financial system per UMC and is necessarily the case in all UMCs. Nevertheless, in all UMCs heads of Department are ultimately faced with balancing the budgets and time-sheets, and in a pressure production-orientated environment, research, a core task of every UMC, gets reduced to a lower priority level. Perhaps, confusingly (but similar to University practices), supervising and teaching PhD students doesn't count as paid teaching but is a required task for (a successful career of) any independent clinician researcher (see first bullet point above).
- The level of autonomy that a clinician researcher has over his/her planning of research/education tasks is too limited. Even for clinicians with dedicated research time, patient care takes priority, thereby reducing the amount of time available to concentrate on research and/or education. Often research time is used for patient care; the reverse rarely happens. In many cases, increased autonomy comes with increasing seniority, but that is not always the case.

#### **Recommendations:**

- UMCs:
  - Whilst it is clearly recognised that patient care will always have priority, **dedicated research or education time** is one of the pivotal positive changes that could be implemented as part of Recognition and Rewards. Develop best practices for implementing policies to allocate dedicated time for patient care, research and/or education to clinician researchers in academic positions, depending on the talents of those working in a department (or comparable responsible unit) and the choices that can be made.
  - Ensure that **workload**, **focus and division of tasks** in this regard **are actively discussed** at the management level of departments, subsequently within the department, and at the individual level, e.g. in annual appraisals.
  - Develop policies to avoid fragmentation of educational and/or research tasks.
  - Allocated time for research and/or education is only possible if the whole team gets credit.
    Develop practices that foster open recognition and ensure that, for example, time spent on academic tasks like research and education is valued as equally as patient care or vice versa.
    Open dialogue is necessary.
  - For the assessment and evaluation of clinician researchers, develop practices allowing transparent consideration of various tasks and responsibilities and equal valuation.
     Evaluation of researchers is not one-size-fits-all, and this needs to be reflected in the criteria and guidelines for evaluations.
- NFU:
  - In the context of the classic academic career ladder, formulate a clear statement that dedicated and paid time for research and/or education is a minimal prerequisite for research/ education and one of the principle values that the NFU is striving for. The message will help young clinician researchers to find a basis from which to start discussions with their managers. Furthermore, this is a clear message to individual UMCs to develop in-house policies in this regard.
  - Facilitate the discussion with CCMS on realistic research time options during medical training (in combination with a PhD trajectory or after PhD graduation), allowing the talented clinicians to pursue their academic career.

#### 4.3 Team spirit

#### Findings:

In medical science, multi- and interdisciplinary teams are essential, and most participants expressed satisfaction in contributing their expertise. UMCs in the Netherlands, as a group of prominent academic institutions, combine top academic science with real-life, societally relevant clinical questions. The one strengthens the other.

- The unique character of combining researchers in science, social sciences, biomedical and clinical fields in close proximity within one organisation leads to fruitful collaborations:
  - This aspect was very well appreciated by all participants. Approachable and easily accessible multidisciplinary collaboration for projects addressing clinical questions and needs was mentioned as a strength of the UMCs.

- Problems in collaboration/projects may arise from insufficient clarity of the different roles, autonomy and responsibilities, such as project leader, methodology expert, clinical expertise;
- In the current recognition system, a limited number of research roles is visible and valued, e.g. the research leader.
- Being a leader in team science has much to do with having a view on the added value and strength of collaboration/teamwork, as well as diplomacy and communication skills to value all expert contributions.
- As the current selection and promotion system generally favours individual accomplishments, sometimes limited space for collaboration was felt to be present, especially within one UMC/department. This was experienced as a form of undesirable competition. A number of participants mentioned they preferred to collaborate in research projects with colleagues from other UMCs for this reason.
- In UMCs, the three core tasks (patient care, education and research) are intertwined and inextricably linked. From the discussions with the clinicians it became clear that:
  - There is little recognition or reward for all the smaller and larger contributions which make research projects possible. This also counts for ensuring the continuation of other core tasks within the department. For example, clinical tasks need to be done at the department level, and recognition is also necessary of the clinician who participates mainly or even entirely in patient care, thereby facilitating the participation of another clinician in educational or research tasks.
  - Within departments, a lack of transparency was sometimes felt about the different contributions to these core tasks. Also, differences between departments within a UMC were noticed, and dependent on the flexibility and options of the Head of Department.

#### **Recommendations:**

- UMCs:
  - **Make everybody's contribution visible and valued**, it is the foundation of team spirit. Therefore, within the collaboration and project setting, as well as publishing, everybody's role should be visible, and the roles can change depending on the phase of the project/ collaboration. This extends to collaborations with non-academic hospitals, which are often involved in studies with patients in second-line referral care.
  - The transparent contribution of each member to core tasks requires regular communication about everyone's involvement in activities and time within the team/group/department and the valuation of all contributions to the whole. Ideally, this also includes the contribution of colleagues participating mostly in patient care, which facilitates the participation of their colleagues in the other core tasks within the department. This approach may initiate a culture in which research findings and their impact (especially clinical) can be felt as successes to which all members of the department/group have contributed. Here the UMC (with its infrastructures, preconditions, financial incentives) and the Heads of Department (leadership on team science, flexibility, finances) play an important role.
  - Contributions to team science don't necessarily have to be tangible in terms of quantitative indicators. It is important to **allow for a broader perspective of individual contributions to team science** without increasing bureaucracy.

- Develop **broader communication strategies** to highlight all kinds of team achievements. This includes communication of different types of successes, not limited to individuals in competition who acquired research grants, but also other performances within all three core tasks and in collaboration with others, highlighting the various contributions.
- Develop broader possibilities for academic career progression (see next point) and add teambased promotion criteria to **stimulate collaboration and reduce collegial competition**.
- NFU
  - Support and stimulate discussions about **programmes and funding initiatives for team science** with different conventions and stakeholders.

#### 4.4 Academic career progression and support

#### Findings:

A small number of participants referred to the personal support they had received during their career development and how this had helped them to find their place. It was also mentioned that working at a UMC made them realise how many different career opportunities the organisation offers, and how complementary these are to fulfil the various tasks. The participants referred in particular to medical specialists who are excellent doctors for their patients as contributing essentially to the tasks of academic teaching hospitals.

Along with these positive findings, the following issues were addressed:

- Hiring policies at departments (or other responsible unit) were felt to be more about keeping the status quo than using vacancies as an opportunity to search for the best fit of the unit as a whole. Examples of such hiring practices were:
  - Being hired as a medical specialist automatically resulted in taking over the tasks and responsibilities of the person who left, without considering alternatives relevant to the department or facilitating optimal use of personal talents and ambitions;
  - During the job interview, research options and ambitions were discussed, but in reality there was no time allocated for this task;
  - It was noted that the present academic system at UMCs is so demanding that people are selected who can deal with high pressure; they are not necessarily the highly talented ones.
- The participants put forward that guidelines for an academic career combined with clinical care duties are generally unclear, e.g. how do tenure track or promotion guidelines apply to clinicians? Combined with a lack of transparency within departments about the allocation of clinical, research and educational tasks and time, it was felt that everybody has to find his/her own career path without much support or guidance.
- Female and male researchers and scientists continue to be valued according to different standards in research assessments. Female scientists expressed that these practices hamper their careers. The gender payment gap was also mentioned as a source of inequality within academia.
- Acquiring the University Teaching Qualification (UTQ/BKO), a prerequisite for an academic position, is a high barrier for many clinicians with research tasks.
- Talent policies within departments are generally limited or lacking. Seniority appears to be a guiding principle for academic career development. Thus, departments are missing opportunities for

strategic research and personnel planning, and individual academic medical specialists miss flexibility towards changing ambitions and competences. This was referred to as "a waste of talent".

- Departments in UMCs, as well as in universities, have limited strategic research budgets, and their research activities are increasingly dependent on realising external research funding. Together with the notion that attracting research funding has some elements of a tombola, and academic careers are increasingly dependent on being able to attract funding, opportunities for strategic research and talent planning within departments are generally too limited or absent.
- Individual academic careers are largely dependent on the leadership style within the department. As a result, inequalities arise within the organisation. The valuation of academic tasks and positions is a complex matter. Although reaching a professorship is a highly valued achievement, not all staff members have the ambition or qualities to become a professor. It was noted that the present academic career system does not recognise and value the many different ways and (academic) functions within UMCs that contribute to creating societal impact.

#### **Recommendations:**

- UMCs:
  - Hiring and promotion policies at departments should be about searching for a good fit of competences and skills. In addition, a **good personal fit within the team is highly relevant** and may be more important than finding the person who scored highest on selected professional competences.
  - Make sure the **hiring and promotion practices are in line with diversity standards** in a broad sense (along the dimensions of cultural differences, ethnicity, gender identity, sexual orientation, socio-economic status, age, physical abilities, religious beliefs, political beliefs, or other ideologies).
  - Due to differences in job security for medical specialists with research tasks to that of other researchers at the UMCs, **differentiation between tenure track criteria** is desirable. Incentives for academic medical researchers could be the allocation of research time or budget (instead of a permanent position).
  - Develop and communicate **clear HR procedures** about job criteria, tasks and regular evaluations.
  - Some UMCs have developed **career paths** with a specific **focus on education tasks**. Such differentiation acknowledges that specific motivation and competences are required and valued.
  - Participants **appreciated the approach to differentiate between tasks and career paths** at UMCs as part of the Recognition & Rewards movement. The following career profiles were mentioned: the medical specialist who is an excellent physician in patient care; the educator/ lecturer; the clinician scientist. Furthermore, management tasks within the department need to be valued in their own right.
  - UMCs and their **departments need to develop talent policies for strategic planning,** stimulating team science and supporting individual talent development (e.g. academic leadership training programmes) in line with these departmental policies.
  - Career policies and the people applying them in practice need to be aware of explicit and implicit biases as well as gender differences in assessments and be continuously alert to **correct and overcome inequalities**.

- Develop mentor programmes for junior and mid-career staff to support and facilitate informed choices. To guide such programmes, it is recommended to develop standard career development formats, which include the assessment of individual training and supervision needs.
- Mentoring from the start of medical education is crucial to facilitate the choices and ambitions from an early stage. **Recognise and value the role models** for every phase of professional growth.

#### • NFU

- Coordinate actions to address the barriers for clinician researchers/educators who want/ need to obtain their teaching qualifications.

#### 4.5 Evaluation criteria

#### Findings:

The focus group discussions reflected that participants appreciate the value of research assessments, their underlying criteria/guidelines and procedures, as well as the notion that changes in the current systems are necessary. The following topics were raised:

- Medical research often requires large consortia. Presently, only a limited number of author positions is valued, leaving many necessary researchers unrewarded.
- In some smaller clinical areas, all researchers in the Netherlands collaborate and publish together. As a consequence, publishing without your PhD supervisor, as an indication of seniority and independence in research, is problematic.
- The emphasis on impact factors as a quality indicator in research evaluations disregards differences between research fields.
- Ancillary positions, such as membership of national and international professional organisations, committees and boards, are presently only partially rewarded for career perspectives at UMCs.
- Requirements to publish high-impact papers and to supervise to completion a set number of PhD students in a specified time frame are perverse incentives of the academic system.
- For academic assessment, the number of PhD students supervised usually counts, while rewarding the nature and content of the research education and supervision, the time spent on these tasks and their quality. Thesis guidelines generally focus on quantitative criteria, such as the required number of chapters, although official regulations do not support this.
- The nature of PhD theses of UMCs differs widely, raising the question of whether assessment criteria for theses based on clinical patient studies need to differ from those for theses based on biomedical/fundamental research topics.

#### **Recommendations:**

Research evaluation criteria are largely embedded in the broader international scientific culture. Thus, developing new criteria at a national and institutional level is difficult. In the context of the Recognition & Rewards movement, however, all institutions play an active role to achieve the desired cultural changes. Therefore, the UMCs are encouraged to develop and implement new evaluation criteria step by step, to ensure that the research climate in the Netherlands is valued internationally for its timely and careful adjustments.

- UMCs & NFU:
  - Participants support the need to change the research evaluation criteria. Suggestions included:
    - The **quality of the PhD research training** needs to become more important in academia. This requires an additional system, assessment measures (e.g. 360° assessments, exit interviews after the defence) and quality assurance.
    - Limit the number of PhD students to be supervised in the various roles (e.g. daily supervisor, promotor).
    - Develop **new guidelines for assessment** of: research collaborations; team leadership; ancillary academic and professional tasks (national and international board/committee membership); international network; scientific review activities; clinical and translational research impact; differentiating between larger and smaller research fields. And do so without increasing the administrative burden.
    - Develop clear indicators to show (growth of) independence in research.
    - For publications, describe the role and contributions of all team members/collaborators.
  - Development of new research evaluation guidelines needs to be done in close collaboration between clinician and non-clinician researchers at UMCs and universities, as they have to be broadly applicable within multiple settings.
  - New evaluation and assessment criteria can be implemented successfully if the actions related to them are recognised, supported and stimulated at all levels within the organisation.

#### 4.6 General recommendations

- UMCs:
  - Make the UMC/talented
  - Department strategy leading during hiring practices for academic clinicians, taking into account the required profile (research, education or patient care) of the medical specialist corresponding with the fit and ambitions of the candidate.
  - Although career perspectives of non-clinician researchers in UMCs is to some extent comparable to that of researchers working in a university environment, we recommend nevertheless to repeat this series of focus group discussions at the UMCs with non-clinician researchers. Their experiences, career bottlenecks and ideas for changing the academic value system they work in are equally important for the Recognition & Rewards movement, NFU and all UMCs.
  - Discuss this document broadly within the UMC to facilitate transparency and discussion of common values, quality standards and recognition, not only for the clinicians, but for the entire academic population.
  - Recognise and value researchers as role models who actively promote and help change the academic culture in line with the vision of the position paper "Room for everyone's talent".

# 5 Attachments

#### 5.1 Participants

This report would not be possible without the enthusiasm and time investment of all participants. Hereby we would like to recognise and reward their involvement.

The participants of the focus group discussions were clinicians, all with a PhD, who are involved in the different academic tasks (research, education & training, in combination with patient care) and in various phases of their career (from physician in training to full professor). Two focus group discussions were done in each involved UMC with the following representation (Name, Department):

Amsterdam UMC			
Godelieve de Bree	Internal Medicine	Jolanda Kluin	Cardiothoracic Surgery
Lieuwe Bos	Pulmonology	Daniela Oprea-Lager	Nuclear Medicine
Hilgo Bruining	Neuroscience	Denise Veelo	Anaesthesiology
Martine Chamuleau	Clinical Haematology	Louis Vermeulen	Internal Medicine
Sarah Derks	Medical Oncology	Kak Khee Yeung	Cardiothoracic Surgery
Marleen Kemper	Pharmacy	Lia van Zuijlen	Medical Oncology
Erasmus MC			
Jasper Been	Paediatrics	Jaap Mulder	Paediatrics
Bas Groot-Koerkamp	Surgery	Marc Mureau	Plastic Surgery
Stijn Keereweer	Otorhinolaryngology and	Joost Nuyttens	Radiology & Nuclear Medicine
	head and neck surgery		
Birgit Koch	Pharmacy	Edwin Oei	Radiology & Nuclear Medicine
Mijke Lambregtse vd Berg	Psychiatry	Rianne Oostenbrink	Paediatrics
Martijn Lolkema	Medical Oncology	Sinno Simons	Paediatrics
Irene Mathijssen	Plastic Surgery	Marion Smits	Radiology & Nuclear Medicine
Bianca Mostert	Medical Oncology	Meike Vernooij	Radiology & Nuclear Medicine
LUMC			
Natasha Appelman-Dijkstra	Endocrinology	Anna Roukens	Infectious Diseases
Martijn Boon	Anaesthesiology	Jesse Swen	Pharmacology-Toxicology
Jeroen de Bresser	Radiology	Onno Teng	Endocrinology
Nienke de Glas	Internal medicine	Gisela Terwindt	Neurology
Marieke Niesters	Anaesthesiology	Dennis Vriens	Radiology
Meta Roestenberg	Parasitology	Liesbeth Winter	Endocrinology
Joris Rotmans	Nephrology		



#### Radboudumc

Erik Bischoff	Primary and Community Care	Iris Nagtegaal	Pathology
Chantal Bleeker	Internal medicine	Tim Olde Hartman	Primary and Community Care
Kalijn Bol	Internal medicine	Inge van Oort	Urology
Hedi Claahsen	Paediatrics	Hanny Pijnenborg	Obstetrics & Gynaecology
Ingrid Desar	Medical Oncology	Michiel Schreuder	Paediatrics
Ingrid van de Geest	Orthopaedics	Marieke Seyger	Dermatology
Dirk Geurts	Psychiatry	Madelon Vonk	Rheumatology
Jacobien Hoogerwerf	Internal Medicine	Saskia de Wildt	Pharmacology-Toxicology
Mark ter Laan	Neurosurgery		

#### UMCG

Shafak Al-Uwini	Radiotherapy	Cyril Moers	Transplant Surgery
Jan Geertzen	Rehabilitation	Niek Prakken	Radiology
Barbara Horvath	Dermatology	Jelmer Prins	Obstetrics & Gynaecology
Margriet de Jong	Internal Medicine	Michiel Rienstra	Thorax
Nine Knoers	Genetics	Jan Stephan Sanders	Nephrology
Marjolein Knoester	Medical Microbiology	Carolien Schröder	Oncology
Schelto Kruijff	Surgery	Ger Sieders	Surgery
Barbara van Leeuwen	Surgery	Ymkje Stienstra	Internal Medicine
Hanna van Loo	Psychiatry		



#### 5.2 Questions (in Dutch)

Vragen aan klinische onderzoekers tijdens focusgesprekken t.a.v. E&W:

- Medisch specialisten die een academische loopbaan nastreven kennen een lang opleidingstraject, waarin medische specialisatie en opleiding tot onderzoeker naast/na elkaar plaatsvinden. Bestaan er knelpunten op het gebied van de loopbaanontwikkeling die specifiek hiermee samenhangen?
- 2 Wat/hoe zijn de ervaringen met diversificatie van klinische carrièrepaden:
  - Vinden we dat clinici de kans moeten krijgen zich te ontwikkelen tot clinician-scientists/ researchers (vergelijkbaar met onderzoeksgroepsleider, o.5-o.8 fte) of clinician met scientific interest (bv o.2 fte onderzoek)?
  - Welke carrièrepaden worden je nu geboden door het UMC waar je werkt, of ken je voor klinisch onderzoekers uit andere academische ziekenhuizen?
  - Wat gaat er nu goed t.a.v. je carrièrepad? Wat zijn de knelpunten?
- 3 Hoe kijk je aan tegen team science en de rol van de clinicus hierin?
- **4** Wat zijn de verschillen in de beoordeling van de academische prestaties van onderzoekers met en zonder klinische taken?
  - Noem positieven en negatieve voorbeelden.
  - Wat zijn de kwaliteitsindicatoren die niet mogen missen bij de beoordeling van een klinische onderzoeker?
- 5 Zie je verschil in leiderschap tussen de kerntaak patiëntenzorg en de kerntaak onderzoek (medisch en academisch leiderschap)? Noem positieve en negatieve voorbeelden.
- 6 Eén vraag om zelf toe te voegen. Voorbeelden hiervan kunnen zijn:
  - Hoe waardeer en ervaar je de diversiteit van disciplines en expertises in een team/afdeling? Noem de voorbeelden die niet overgeslagen mogen worden. Kun je best practices noemen?
  - Hoe ziet de optimale samenwerking in onderzoek tussen klinische niet klinische onderzoekers eruit?
  - Hoe komt de 'focus op kwaliteit' tot uiting in je eigen jaargesprek met je leidinggevende? En in jaargesprekken van jou met je medewerkers, bv. t.a.v. de opleiding van onderzoekers, criteria t.a.v. proefschriften?

#### 5.3 Current practices in the context of Recognition & Rewards

The focus group discussions often resulted in the exchange of experiences which could be identified as solutions to the above-mentioned bottlenecks. At the end of each session, the participants were asked to share practices of their own UMC they are proud of.

MUMC+ & UMCU shared their progress and practices to make the overview of the current developments complete.

#### Amsterdam UMC

#### Principal Educator system Amsterdam UMC

In 2012, the Principal Educator (PE) program was developed at the Amsterdam UMC. The Amsterdam UMC wants to be a top institute for all of the healthcare training it offers. The Principal Educator program fits this ambition (additional information, news item, presentation). The teachers and trainers are responsible for the quality and innovation of education. By appointing a number of teachers with a talent for education as PE, providing them with time and space to make an active contribution to education, they can play a central role in this. An Amsterdam UMC PE is an involved teacher who has a leading role in education and/or training, who has didactic qualities, and who devotes a substantial part of his/her time to education.

#### MD/PhD Scholarship AMC

The <u>MD/PhD Amsterdam UMC Scholarship program</u> combines the medical Master program with PhD research. Candidates for the program are exceptionally talented, final-year Bachelor students in Medicine aspiring to a career as both medical doctor and scientific researcher. It offers the opportunity to graduate in a shorter time. The students participating in this program can prepare for their Master and Doctorate degree simultaneously.

#### ErasmusMC

#### **Diversity in academic profiles**

In the Erasmus MC education vision, 'Being a doctor in 2030', an important premise is that teaching, research and patient care are core tasks of equal value, and that as many constructing links as possible should be established between them. Erasmus MC wants to be an educational organisation where teaching is provided by top lecturers. Activities are therefore developed and facilities created for the further professional development and strengthening of the academic teaching staff. This includes creating more education-oriented functions with the prospect of evolving towards Assistant Professor or Associate Professor. With the possibility of such an educational career, Erasmus MC is making a structural and fundamental contribution to educational innovation and the quality of the teaching and lecturers. The guidelines for an Assistant Professor and Associate Professor with an educational career have therefore been added to the procedure. There is also the possibility of establishing a chair in education at Erasmus MC.

As it is important for good, topical academic education that teaching staff should remain active and informed of new developments in science, staff members (especially clinical ones) who opt for a teaching career are expected to do a minimum amount of research with the corresponding output.

Unlike in the case of a Professor in education, whose research focuses on education, the research of an Assistant Professor or Associate Professor with an education profile may take place within their own scientific or departmental discipline. Candidates who are appointed as Associate Professor in education have the opportunity to participate in the writing of research proposals or research in the field of education via the Institute of Medical Education Research Rotterdam (iMERR) or other entities.

The model for an educational career at Erasmus MC is characterised by:

- 1 Equal value attached to education and research in profiling and assessment, and actual time and room for staff members to focus on education;
- 2 Besides teaching, they must also be active in one or more of the following areas: educational reform, education research and educational organisation;
- 3 Fulfilling the minimum guidelines for academic research. For Assistant and Associate Professors, this is allowed in their own research field. A research focus on *education* is not essential for an appointment as Assistant Professor or Associate Professor.

In order to promote diversity in academic profiles further, since mid-2020, CV narratives are requested as part of the promotion track in order to create a more holistic impression of a scientist's performance. Erasmus MC operates an internal grants program to fund ambitious translational research to be performed jointly by clinician and fundamental scientists. It operates talent reviews for departments to aid in recognising, training and stimulating talented researchers.

#### LUMC

#### **Career development for Medical scientist**

In order to realize our ambition to be among the top 10 best UMCs in Europe, it is necessary to recognise, develop and retain the talents of the medical specialists in our organisation. An effective career policy is an important instrument for binding talent and attracting external talent on the one hand and promoting mobility within the career path on the other.

In the career policy for medical specialists, we focus on two types of tracks:

- 1 The main track: this track is intended for the majority of medical specialists working in our organisation. It is the standard career path for medical specialists and provides clarity on tasks and responsibilities. Progression to the next level is the subject of discussion between the responsible manager and the employee. In advance, it is not certain whether the following development step will take place, whether it will be horizontal or vertical, and when it will occur.
- 2 *The talent track for high potential candidates*: this track is meant for the top talents who excel in linking patient care with scientific research and education. After meeting the criteria within a certain period, it is possible to progress to the next level within this track, ultimately ending with a nomination for a full professorship.

The scope of the policy is currently limited to two career tracks:

- 1 Clinician scientist: in this career path, a medical specialist combines clinical tasks with scientific research, and academic teaching is a secondary task.
- 2 Clinician educator: in this career path, a medical specialist combines clinical tasks with academic teaching, and an additional task involves scientific research.

In line with the position paper 'Room for everyone's talent - towards a new balance in recognition and appreciation', we are adding the domains of Valorisation and Leadership to the reward system for Research and Education. To excel in science, we aim for development in all domains: Education, Research, Valorisation and Leadership. It is not realistic for every medical specialist to excel in all domains; to advance, he or she must demonstrate a certain standard in all domains.

To get a good picture of the current level and potential of the clinical group, to promote mobility within this group, and to be able to select top talent for a talent track, a biennial cycle is set up at the departmental level. This cycle is supported by a Strategic Personnel Planning process approach.

# Career development medical specialists LUMC for the domain scientific research and education

	MAIN TRACK	TALENT TRACK
Supervision and mentoring	Direct supervisor	Direct supervisor, advice on assessment by talent board, extra coaching by mentor.
Perspective	Not clear in advance whether and when the next step will occur. Intermediate level as final perspective.	If the criteria are met within a certain period, guaranteed promotion to the next level, with the intention a nomination for professorship as end point.
Rights and titles	N.A.	Title associate professor upon completion of the track.
Criteria for promotion	Defined criteria for each level for the four domains: research, education, leadership, valorization. For clinician scientist and clinician educator a different set of criteria is used.	Defined criteria for each level for the four domains: research, education, leadership, valorization. For clinician scientist and clinician educator a different set of criteria is used.



#### MUMC+

#### **Career trajectories**

Maastricht UMC+ has been facilitating more diverse career trajectories for academic/clinical staff members over the past years. The overview and clarification below show the change in career trajectories.

#### Career trajectories: a continuum -> diversity & academic culture

Education Leadership Impact Clinics

Career path		2010	2020
PhD/PD	MUMC+ Talent Fellowships (R)	interviews  • 1	alent programs research schools (diversity of careers)
Assistant professor	Faculty staff $ (R+E)$ Medical specialist $ + (C+R/E)$	)	Tenure Track → (R+ E+ I + L)  Tenure Track → (R+ E+ C + L)
Associate professor	Research +E track	Education +R track	Clinics + E track  Clinics + R track
Full	• Top Talent program – – – – – – – – – – – – – – – – – – –		
Professor	Chair Medical discipline (R + C)		
Maastricht University 🗘 Maastricht UMC+			

#### PhD/Post-doc

For talented researchers who obtained their PhD or are finalising their PhD (or for researchers in training as a medical specialist (NL: arts-assistent niet in opleiding)), Maastricht UMC+ established a Kootstra Talent Fellowship programme many years ago. This Talent Fellowship programme aims to facilitate talented researchers to develop their own research ideas and CV, and subsequently help increase their chances of obtaining personal grants from external funding agencies. The selection for this fellowship was initially based on the quality of the research proposal. Throughout the years, the focus with interviews and narrative CVs has shifted towards the candidate behind the application, with an emphasis on research, impact and leadership. A range of talent programmes has been initiated by the thematic, interdisciplinary research schools, focusing on a diversity of careers for PhDs and post-docs within academia.

#### Assistant professor

In the past years, tenure tracks for faculty staff have been established within Maastricht UMC+, where the candidate is in the lead to qualify for an assistant professorship. These tenure tracks have shifted over the years from a mixed profile including research and education to more emphasis on impact and leadership (guidance of MSc, PhD students and support staff) and mentoring by

a personalised team. A tenure track for talented medical specialists (in training) is not common because of their permanent position but could be important to establish because of their academic development.

#### Associate professor

Recently, Maastricht UMC+ incorporated two specific tracks for clinicians who stand out by combining excellent clinical work with either distinct research or education talent. As from 2021, Maastricht UMC+ has the following profiles in place for associate professors: mixed profile, profile education, profile research, clinician education and clinician research. In the appointment and evaluation of these academic profiles, a mix of indicators is taken into account, such as research, education, patient care, societal impact, organization and leadership, including a narrative CV.

#### **Educational career track**

In 2010 Maastricht UMC+ started an education career track for staff that can result in an educationbased professorship including research on education within their own discipline.

#### Professor

In 2008 Maastricht UMC+ started the Toptalent programme, in which groups of approximately 10 talented scientists (potential academic leaders) are selected every two years at the assistant or associate professor level to jointly receive an academic leadership training combined with an individual development plan with the aim to develop into a professorship within 5 years. Over the years, more attention has been paid to impact, incorporation of clinical profiles, and the creation of interdisciplinary sparring groups after finishing the programme.

#### Radboud*umc*

#### **Master PhD scheme**

Facilitating excellent students and involving research in education are key elements in the policy of the Radboud university medical centre. The Executive Board (RvB) of the Radboud*umc* has allocated money to give top students of Medicine, Biomedical Sciences and Molecular mechanism of diseases the opportunity to perform research as a PhD candidate on a self-initiated project. Annually, six projects are available.

#### Hypatia fellowship

The Radboud*umc* Hypatia Tenure Track Grants aim to promote innovation in academic research by giving young, creative and talented researchers, including clinicians, the opportunity to develop their own research line within the strategic areas of Radboud*umc*. These unique and highly sought-after research positions offer a special opportunity to establish an independent research group in a specific topic. By obtaining a <u>Hypatia Tenure Track Grant</u>, candidates will also be offered the possibility to develop themselves as leaders within their academic fields.

#### Academic career path

Radboud*umc* has the mission "to have a significant impact on health(care)"; it is our task to stimulate and strengthen the connection between the three core tasks (patient care – education –

research) in order to achieve it. This requires an academic attitude/mind set of every Radboudumc professional in all her/his tasks. From her/his leading core task, the Radboudumc professional seeks the connection with and the reinforcement of the other core tasks. We intend to create greater diversity in career paths for academic staff, which are in line with individual and organisational needs.

Initially, the Scientific Career Paths (SCP) policy was developed with an emphasis on research, as described below, and is in the <u>implementation phase</u>. For many early career researchers, who are working on a PhD or in a postdoc position, an academic career is the professional goal they aspire to achieve. However, only a fraction of them can obtain a permanent position at a university; most of the others become fact-based problem-solvers elsewhere in society with excellent career perspectives (figure).



#### Academic career paths: first step Scientific Career Path

Radboudumc

Every PhD candidate and postdoc needs clarity and proper career guidance, both the majority who will leave academia and the few who will continue. This reality demands a broader perspective of PhD candidates and postdoctoral fellows as well as their supervisors because the academic career is often seen as the default option with a non-transparent and non-linear path towards a long-term academic position for a few. With this in mind, a new scientific career path scheme was designed for Radboudumc. This policy acknowledges that reality and provides a framework for a transparent and fair path towards independent academics, staff scientists at university, or leaders in our globalised community. It considers distinct talents, individualised training, the need for leadership and internationalisation, and a fair selection and promotion process that applies transparent criteria covering more than simple bibliographic or grant metrics. In short, it is a leap forward in contemporary human resource management for academic personnel. If embraced and filled with life, Radboudumc foresees benefits largely by nurturing our next generation of academics and sending out our graduates optimally prepared into the world.

#### Scientific career paths: 2 main tracks



Radboudumc

In this way Radboud*umc* fulfils a central role in our society, to nurture the best scientists within academia and to prepare the next generation of responsible leaders who shape our societies with innovative solutions based on facts and analysis while limiting biases and preoccupations. The development of the clinical and educational career paths (full range) should be aligned and will be worked out in the coming period. Strategic Personnel Planning is key to connect the current and future needs. In the meantime, the narrative-based CV is requested as part of the promotion tracks for professors (full and associate) with all three profiles (research, clinical and educational).

#### UMCG

#### **Career path differentiation**

Academic career differentiation at the UMCG is organised along the lines of its core tasks, i.e. patient care, academic research and education. Leadership in terms of aims, positions, tasks and competences are being defined in all domains. New criteria and procedures for promotion in the academic and educational tracks have been developed and implemented, while this is underway for the clinical leadership track.

Academic careers are differentiated according to differences in research topics, networks, stakeholders, funding opportunities, and output parameters. In this way, four research impact profiles have been developed: Research, Health Care, Education, and Society & Valorisation. Academics can develop a career within the Regular Academic Track (internal promotion leading up to associate professor or the Talent Track (internal promotion up to full professorship; top 5%).



#### **UMCG** academic career development

# Career development policies for physician-scientists MD/PhD programme and Mandema stipend:

- The MD/PhD programme offers around 35 students per year the opportunity to combine their Master phase with a PhD training to obtain a (D)MD and PhD degree upon completion. They are financially supported to spend an additional two years on scientific research alongside their regular medical or dental educational programme. Thus, they obtain their PhD in two years instead of the regular four years. The programme features an enormous flexibility and gives the students the possibility to advance specifically in their field of interest.
- A Mandema stipend is given to approx. 4 talented residents per year who recently obtained their PhD to combine their specialist training with academic research. The aim is to support the development of their own research line. Candidates aim to enrol in an academic career path.

#### Career paths for clinicians:

 Physician-scientists who directly create impact on health care (extra- and intramural care and public health) with their research, e.g. by contributing to new diagnostic or treatment procedures, or national and international clinical guidelines, may chose the Health Care research impact profile for their academic position. In this way, their multidisciplinary research networks, impactspecific output parameters, and funding sources are valued, in addition to traditional scientific criteria. The Educational Leadership career path is also meant for clinical trainers.

#### **Financial support:**

- Clinicians who obtain a junior research grant (Veni or comparable) or midterm research grant (Vidi or comparable) qualify for a maximum of 5 years of financial support to partially cover the costs between a researcher and clinical salary.
- Clinicians with an academic career in the Talent Track, which may lead to full professorship, qualify for financial support for a maximum of 5 years to cover salary costs for 1 day/week for research, under the condition that the department also allows 1-1.5 days/week for non-clinical tasks.

#### UMC Utrecht

Recognition and rewards, specifically the alignment between UMC Utrecht's mission and individual incentives and criteria, <u>have been debated since 2014</u>. One of the UMC Utrecht-specific approaches has been to involve patient organisations and other societal stakeholders in our institutional research evaluations (SEP). In line with Utrecht University, UMC Utrecht has this year instigated an Open Science team, headed by the dean, with recognition & rewards as one of the themes.

At the level of individual career assessment, UMC Utrecht introduced a <u>qualification portfolio</u> for aspiring professors and associate professors from 2016. This requires candidates to describe their activities along five domains: research, clinical, teaching, impact & innovation, and leadership. This also enabled the appointment of 'valorisation associate professors', with a focus on public-private collaboration.

Recently, a distinct profile for 'clinical scientists' was introduced, guaranteeing 0.4 FTE research time to a select number of healthcare professionals with a PhD, typically but not limited to MDs.

Currently, six distinct but interconnected academic career profiles and related support measures have been developed. In addition to the (1) researcher, (2) clinical researcher and (3) teacher profiles, we are defining an (4) implementation researcher, (5) valorisation researcher and (6) staff researcher. The underlying criteria are in line with the 'Room for everyone's talent' position paper.

For PhD candidates, <u>a new evaluation form</u> was introduced last year that broadened the annual evaluation interview from a focus on progress in chapters and publications to accomplishments in a broader sense. Also, a new guideline defined a PhD thesis as requiring three *publishable* chapters.

Together with the Center for Science and Technology Studies (CWTS, Leiden University), UMC Utrecht conducts qualitative research about how researchers deal with these changes. One analysis outlines three distinct responses. 1) Seeing potential: that it is now possible to see and value things that were undervalued and less visible before. 2) Voicing uncertainty: to find it hard to square the shift in evaluation criteria with their own ideas of science and academic assessment. 3) Re-affirming metrics: they re-affirm metric values that were relatively self-evident before (*report by Dr. Guus Dix, CWTS*).

#### National: AIOTHO

**Arts In Opleiding Tot Huisarts en Onderzoeker.** An <u>AIOTHO</u> is a physician who combines his or her training as a family physician with a PhD trajectory. An AIOTHO track takes about 6 years; 3 years of training and 3 years of research.

#### National: TULIPS

**TULIPS** - national programme for and by all clinician scientists in the field of Child health to become the future research leaders (www.tulipsforchildhealth.nl)

# Colophon

Design

Terralemon, Amsterdam

**Lay-out** Drukkerij Badoux, Houten

