

## Faculty of Science and Engineering

### **Profile report: *Tenure Track Assistant Professor with education profile Individualized Patient Perspectives in Pharmacy (Geïndividualiseerde patient perspectieven in farmacie)***

- Discipline: Pharmacy; Pharmacokinetics/Pharmacodynamics (PK/PD)
- Level: Tenure-track assistant professor with education profile
- Fte: 0.8-1.0 fte

#### **1. Scientific discipline**

Nowadays, pharmacists closely collaborate with general practitioners and are co-responsible for patient treatment. In addition to basic skills in patient communication, managing the patient's expectation regarding the outcome of the therapy requires careful consideration and understanding of the individual Pharmacokinetics/Pharmacodynamics (PK/PD) profile of that patient. This position will predominantly focus on strengthening the understanding of PK/PD-related patient perspectives in various courses in the Pharmacy Bachelor and Masters programs, as well as the Master program, Medical Pharmaceutical Sciences (MPS). The candidate's research should support current research lines in the area of PK/PD within GRIP, or lead to an independent research line aligned with these lines.

#### **2. Vacancy**

This position is opened by the Board of the Faculty (PT/gl/00077) and will be embedded in the Groningen Research Institute of Pharmacy (GRIP). Specifically, the position will be embedded in the basic unit, Pharmaceutical Analysis, as PK/PD teaching and research is embedded in this basic unit (Prof. D.J. Touw (dual appointment at UMCG and FSE), Dr. P.H.C. Åberg). The criteria and conditions pertaining to the position are described in the document '[Assistant professor with an education profile](#)'.

#### **3. Selection committee (BAC)**

- Prof. E. Hak, Education Director, Groningen Research Institute of Pharmacy, Chair of the BAC
- Prof. H.W. Frijlink, Scientific Director, Groningen Research Institute of Pharmacy
- Prof. K. Taxis, Programme Director, Pharmacy Master
- Dr. H.J. Woerdenbag, Programme Director, Pharmacy Bachelor
- Prof. E.M.J. Verpoorte, Head of the Pharmaceutical Analysis basic unit
- Prof. D.J. Touw, Clinical Pharmacy and Pharmacology, UMCG
  
- Prof. A.K. Mantel-Teeuwisse, Program Director, Pharmacy Master, UU
- Student member: F. Pas

Advisors: H.Y. Haagsma (HR advisor), Dr. R. van Calck (policy advisor)

#### **4. Area of expertise**

Staff affiliated with GRIP and the School of Science and Engineering (SSE) have been involved in the education of pharmacy students within the Dutch *2016 Pharmacist Competency Framework & Domain-specific Frame of Reference*. The three universities responsible for the Dutch Pharmacy degree programs (Groningen, Utrecht and Leiden) developed this standard in collaboration with the Royal Dutch Pharmacists Association (KNMP). It incorporates the changing role and position of Dutch pharmacists. Nowadays, pharmacists closely collaborate with general practitioners and are co-responsible for patient treatment (as laid down in the Act of Agreement on Medical Treatment (Wet op de Geneeskundige Behandelingsovereenkomst; WGBO). Over the last few decades, pharmacy has evolved from a product-oriented to a more patient-oriented profession. The 2016 *Competency Framework* lists the learning outcomes for a Pharmacy BSc and MSc in the Netherlands. It is obligatory that a graduate from a Dutch university with a Pharmacy BSc and MSc meets all of the appropriate learning outcomes.

In 2019, in the last external quality assessment of the three Dutch Pharmacy degree programs, the Review Committee concluded that the Groningen Pharmacy curriculum connects in large part with the professional field and its principal domains (primary care, hospital and industrial pharmacy), with post-master specializations such as Community Pharmacist and Hospital Pharmacist (and more recently the new *Kaderopleiding Apotheker*). However, next to basic skills in patient communication, managing the patient's expectation regarding the outcome of the therapy requires careful consideration and understanding of the individual Pharmacokinetics/Pharmacodynamics (PK/PD) profile of that patient. Therefore, more alignment with the current *Competency Framework* in the Bachelor Pharmacy is required.

The assistant professor will develop and teach Bachelor program elements to train students in personalized medicine based on PK/PD principles, using actual patient cases to fulfil these learning outcomes. Further, the learning line for inter-professional and behavioural skills from bachelor (elementary level) to master (advanced level, professional) program will be evaluated and aligned with current Master course elements, in close collaboration with the staff involved in the Master program. Finally, there will be a connection with the applicable post-Master specialization training programs.

#### **5. Embedding: institute (and base unit)**

GRIP is positioned within the Faculty of Science and Engineering (FSE) and physically located within the University Medical Centre Groningen (UMCG) of the Faculty of Medical Sciences (FMS) - hence, in ideal proximity to benefit from collaborations between the two faculties. Together with Medical Sciences, GRIP participates in the joint UMCG-FSE Research Institute GUIDE (Groningen University

Institute for Drug Exploration). Pharmaceutical research within GRIP is multidisciplinary. It bridges the clinical and biomedical sciences on the one hand, and chemistry, mathematics (statistics) and physics on the other. The interaction between the pharmaceutical sciences with these fundamental and clinical sciences offers excellent opportunities for cutting-edge research.

With this vacancy, GRIP's ambition is to strengthen its educational program, particularly in the field of patient outcomes based on Pharmacokinetic and Pharmacodynamic principles (PK/PD). The candidate will be embedded in the GRIP research group Pharmaceutical Analysis (PA, chair Prof Verpoorte). Successful research and education in the area of PK/PD is currently centralized in this unit, and relevant pharmacy modules are coordinated from this unit (e.g. Clinical Toxicology and PK/PD, by Prof. D.J. Touw, Dr. P.H.C. Åberg).

Traditionally, teaching on inter-professional knowledge and pharmacy skills according to the 2016 *Competency Framework*, notably in the Master phase, is coordinated from the GRIP unit Pharmacotherapy, -Epidemiology and -Economics (PTEE, interim Head Prof. E. Hak). In this unit, research and educational staff collaborate in the development, improvement and execution of courses. In this unit, ample experience is available with regard to case-based training, e.g. in the internationally acknowledged pharmacy game GIMMICS. The staff has also been involved in developing the infrastructural prerequisites in line with the *Competence Framework* for future teaching in the new Skillslab, especially the pharmacy practice simulation game-course GIMMICS. Close collaboration of the recruited tenure-track assistant professor with staff from this unit is therefore essential.

The creation of this position within GRIP guarantees the support and strengthening of PK/PD, a core topic in Pharmacy education, and also ensures the candidate can perform relevant research in the area of *Individual Patient Perspectives in Pharmacy* with an emphasis on PK/PD drug aspects.

## **6. Local and (inter)national position**

GRIP has an established history of collaboration with the UMCG Department of Clinical Pharmacy and Pharmacology (CPP). CPP has a strong position in pharmacokinetic/pharmacodynamic research, imaging and diabetes research. Tools have been developed to integrate new knowledge and its use for therapy optimization. Traditionally, these principles are applied in infectious diseases, but current research has also shifted to the field of oncology, using various imaging techniques to localize drugs on both tissue level and cellular levels. Research in oncology is focusing on using imaging techniques, tumor genomics, molecular modeling and plasma drug monitoring to personalize therapy. The outcomes of the research are used to develop tools to personalize therapy, such as Therapeutic Drug Monitoring. In order to receive optimal therapy, patients need to have a basic understanding what the drug is for, how the dosing schedule is defined and on what information doses are adjusted.

## 7. Expected contributions to teaching

The staff member will incorporate elementary patient, consumer and healthcare provider perspectives into relevant BSc courses such as *PK/PD* and *Metabolism and Toxicology*, and *Medicine Group* courses, and support current teaching staff in these large courses with up to 200 students. Further, a course *Healthcare Provider, Patient and Consumer Perspectives of Medicine Use* coordinated by the assistant professor is also foreseen in the third year towards the end of the BSc program and as part of the “specialization courses” in Semester 2A. These courses are also popular among students from other FSE programs who choose the Pharmacy minor.

The assistant professor should also contribute to the Pharmacy MSc program. This includes further alignment and developments within the Master program in close collaboration with teaching staff to strengthen the patient, consumer and healthcare provider perspectives in e.g. pharmacotherapy courses with an emphasis on PK/PD aspects. These perspectives could also be integrated more in the existing Master courses focusing on drug formulation, production and technology, where PK/PD aspects are also an important component.

They will apply innovative teaching methods while incorporating relevant technologies for pharmacy practice (such as apps and wearables, digitalization of information, technologies to enhance adherence) and communication strategies. A major opportunity for training settings will be the new Skillslab in the planned Educational Building at A. Deusinglaan, which comes online in 2022. In this Skillslab, special rooms are foreseen to mimic pharmacy practice and primary care practice, and incorporate advanced-level innovative teaching with virtual reality, robots and digital communication in the Master phase. The new staff member will play a pivotal role in setting up elementary training sessions using this Skillslab in the Bachelor phase. It will be essential for the assistant professor to collaborate with the experienced team of SSE and GRIP teaching staff in the relevant courses. Close collaboration will also be sought with Professors by Special Appointment to align with community pharmacy practice research (e.g. Prof. Liset van Dijk and Prof. Eugène van Puijenbroek) as well as hospital pharmacy research (Prof. Eric van Roon and Dr. Frank Jansman). UMCG Professors D.J. Touw and J.G.W. Kosterink of CPP will provide access to relevant patient cases such as through the outpatient pharmacy (poliklinische apotheek) or the outpatient clinic polypharmacy (polikliniek polyfarmacie). Finally, consultations will be set up with the coordinators and teachers responsible for the *Product Care* learning line.

The staff member will evaluate the outcome of training sessions and implement improvements across courses. Further, the new staff member will develop best practices, and transfer this knowledge to others (Teach the Teachers).

The candidate will be required to seek funding from relevant teaching scholarship programs (e.g. EIT, ErasmusPlus, local funds).

## **8. Expected contributions to research**

The research profile of the new TT assistant professor should complement the foci of education which fall in the area of PK/PD and patient outcome. Focus should be on provider, patient and consumer perspectives associated with PK/PD. Research may support current research lines in the area of PK/PD within GRIP or lead to an independent research line. Although we are primarily looking for candidates with an excellent teaching profile, high potential for successful patient-oriented PK/PD research is required. Research could include, for instance, PK/PD modeling approaches, leveraging data generated in patient studies e.g. at the UMCG.

## **9. Expected contributions to the organization**

The candidate is expected to have an active interest and to provide a positive contribution to the management and organizational tasks of the institute. At the level of FSE, the candidate will contribute to the organization of the faculty, for example by participating in working groups and committees in the area of education. The candidate will participate in relevant national and international organizations.