



university of  
 groningen

faculty of  
 medical sciences

# PhD Study guide

Graduate School of Medical Sciences



2011 - 2012

# Contents

Graduate School of Medical Sciences of the University of Groningen  
at the University Medical Center Groningen.  
Postal address: Ant. Deusinglaan 1, 9713 AV Groningen  
Building 3217.

## Publication

Graduate School of Medical Sciences PhD Study guide.  
October, 2011

## Editors

Prof. Robbert Sanderman  
Ms. Riekje Banus  
The GSMS Degree program advisory committees

With special thanks to Ms. Astrid Bakker, Ms. Renate Kroese and  
Ms. Truus van Ittersum.

## Lay-out

Maarten Strik, Strik Design

## Printing

Grafische Industrie De Marne  
printed on Cocoon\* (CSR\*\*)

\* Cocoon is 100% recycled and chlorine-free paper, acknowledged by FSC, having the FSC 100% recycled-label. Cocoon certificates: ISO 9001, ISO 14001, OHSAS 18001, NAPM, EU ecolabel.

\*\* Corporate social responsibility is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large”

Welcome to the Graduate School of Medical Sciences..... 9

## Admission to the Graduate School of Medical Sciences..... 10

Documents .....	11
Registration .....	11
Organization and Contact Persons .....	12
Behavioral and Cognitive Neurosciences (BCN) .....	12
Chronic Diseases and Drug Exploration (GUIDE) .....	12
Biomedical Engineering and Materials Science (KOLFF) .....	13
Health Research (SHARE).....	13
Research Master's Programs .....	13
Information for foreign PhD students.....	14
Degree program advisory committee .....	14
PhD Council .....	15
PhD Communities at the University of Groningen .....	15
Funds and Financing .....	15
Courses.....	16
Study Requirements .....	16
Research Institutes Contact Details .....	17
Groningen Graduate School Introductory Event.....	18

## GSMS Courses..... 20

### General Competences..... 20

Project Management and GSMS Introduction .....	21
Introducing New PhD Students to SHARE.....	21
BCN Orientation Course.....	21
Management Competences in your PhD Project .....	22
Ethics of Research on Human Subjects .....	23
Scientific Integrity.....	23
Scientific Integrity for Researchers.....	24
Technical & Ethical Aspects of Digital Image Manipulation.....	25
Scientific Literature; Searching and Managing, Citations & Impact Factors.....	25
Critical Appraisal of Literature .....	26
Poster Preparation.....	26
BCN Poster Presentation.....	27
Presentation Skills.....	27
Publishing in English.....	28
Introductory Course “Writing a Successful Research Proposal” .....	28
Science Writing Course.....	29
“Thesis defence in Sight”.....	29
Choosing your Career in Life Sciences.....	30
Survival Dutch.....	30





## Welcome to the Graduate School of Medical Sciences

Every PhD student doing research in a medical sciences-related field is registered with the Graduate School of Medical Sciences. This applies to everyone writing a PhD thesis (dissertation). There are several categories of PhD students, ranging from the regular 4-year PhD students to research fellows and external candidates.

As a PhD student, you will conduct your own research while the Graduate School provides a balanced mix of expert supervision, tailor-made graduate training and the freedom to pursue your own ideas within relevant research themes. In some cases part of the research may be carried out abroad.

Registration with the GSMS provides access to the courses and activities in the Graduate School's teaching program. Participation in the courses is free of charge.

Apart from taking courses, it is important that the PhD students familiarize themselves with activities related to the transfer of knowledge, such as keeping up with professional literature, participation in work discussion meetings and reference meetings, and active participation in national and international scientific meetings.

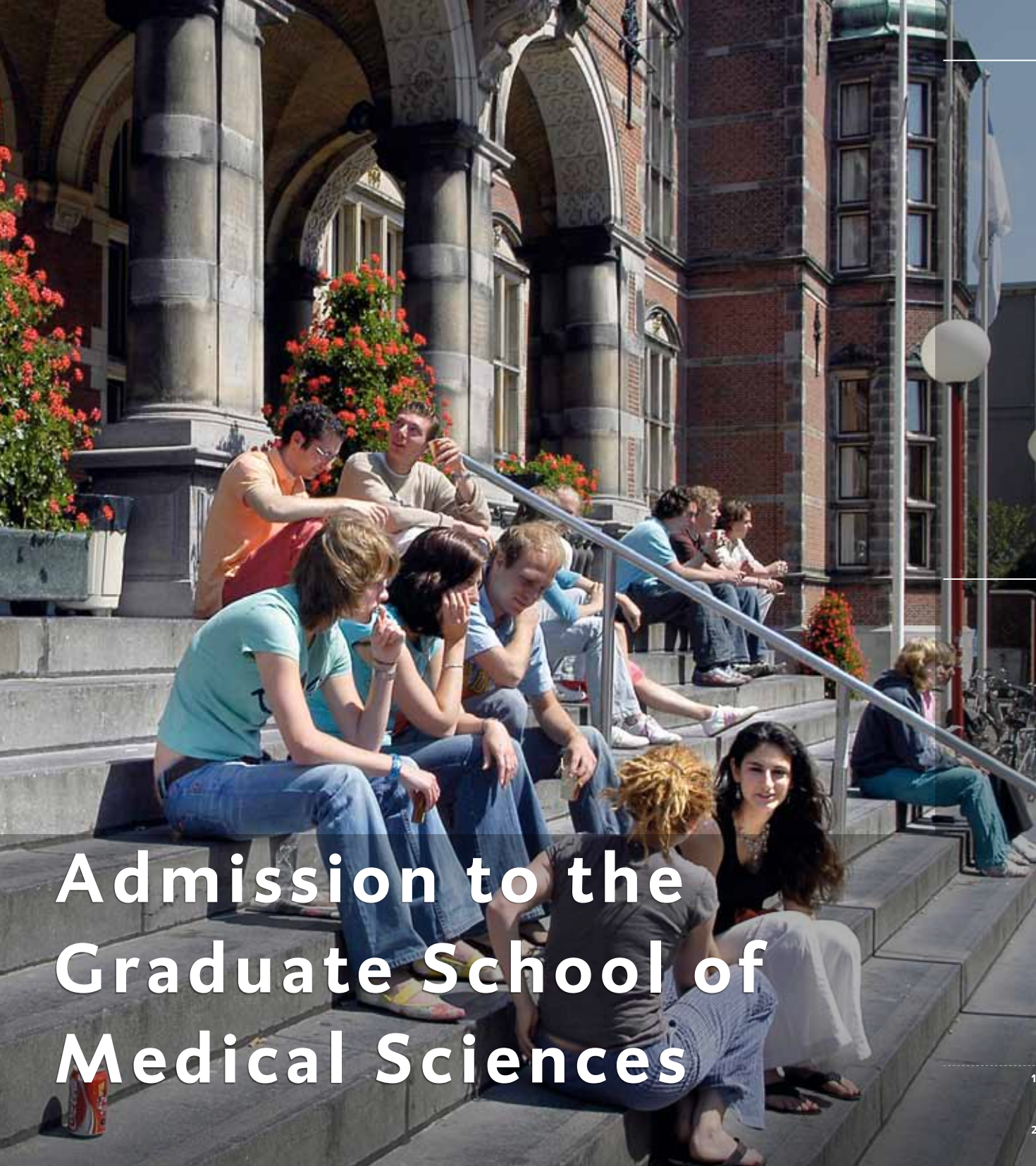
This guide will help you to find your way in the organization and educational activities of the Graduate School of Medical Sciences.

A dynamic organization is constantly evolving, which means that the content of this guide is subject to change. Please note that updates will always be made available online at the GSMS website. In addition, the Graduate School office will inform you regularly about new courses and activities.

I hope that you will enjoy your life as a PhD student and member of our Graduate School and wish you success in achieving your ambitions.

Professor Han Moshage  
Director, Graduate School of Medical Sciences

<http://www.rug.nl/gradschoolmedicalsciences/index>



# Admission to the Graduate School of Medical Sciences

## Documents

Candidates who have been selected for a PhD student position will have to provide the following information: CV, copy of passport (first page only), copies of MSc degree and course transcripts<sup>1</sup>, proof of proficiency in English<sup>2</sup>.

Procedures for PhD students who are employed at UMCG and affiliated institutes are performed by the Human Resource Management (HRM) Departments, procedures for scholarship students will be processed by the Graduate School Office.

In the case of PhD students from outside the Netherlands, both the HRM Departments and the Graduate School Office are supported by the International Office of the Education Institute of UMCG and the International Service Desk of the University of Groningen. Here, assistance is provided with immigration procedures, visas, and initial temporary housing in Groningen.

### International Office Medical Sciences:

[www.rug.nl/umcg/informatievoor/internationalisering/index](http://www.rug.nl/umcg/informatievoor/internationalisering/index)

### International Service Desk:

[www.rug.nl/feb/Informatievoor/exchangestudents/practicalInformation/Facilities/ISD](http://www.rug.nl/feb/Informatievoor/exchangestudents/practicalInformation/Facilities/ISD)

## Registration

Every researcher doing doctorate research in one of the research institutes of the Graduate School must be registered at GSMS. To register, please fill out the GSMS Registration Form and hand it in at your research institute's office (see below).

Registration gives access at no cost to participation in GSMS courses, financial support for scientific activities, and answers to every question you'd like to ask. Registration forms are available from any research institute secretary or can be downloaded from the website:

<http://www.rug.nl/gradschoolmedicalsciences/index>

The Graduate School Office on the 7th floor of "De Brug" is the organizational center of the Graduate School of Medical Sciences. The four research institutes (BCN, GUIDE, W.J. Kolff Institute and SHARE) organize scientific activities that are tailored to the institutes' specific fields of research (including field-specific and interdisciplinary subjects). Detailed information on these subjects can be obtained at these institutes. Contact persons and addresses are given below.

<sup>1</sup> If degree certificates and course transcripts are not available in Dutch, English, French or German, a certified English translation must be added. Photocopies are sufficient for the initial evaluation, but the candidate should bring originals or certified copies for the Doctorate Application (see [www.rug.nl/corporate/informatievoor/phd/regulationsForPhd](http://www.rug.nl/corporate/informatievoor/phd/regulationsForPhd))  
<sup>2</sup> Proof of proficiency in English (for instance in the form of test results for the TOEFL or IELTS) must be provided for all non-European applicants whose native language is other than English.

## Organization and Contact Persons

The Graduate School of Medical Sciences deals with four main scientific areas, along the lines of which the teaching program has been developed. The four areas are:

- Behavioral and Cognitive Neuroscience
- Chronic Diseases and Drug Exploration
- Biomedical Engineering and Materials Science
- Health Research.

Each subject is represented by an Institute with its own office dealing with course organization and registration in its particular field. Below are the offices and contact persons.

### Behavioral and Cognitive Neurosciences (BCN)

Visiting address:

Building 3217 “De Brug”, Room 7.21

Ant. Deusinglaan 1,

9713 AV Groningen

The Netherlands

Phone: +31 (0)50 363 4734

Fax: +31 (0)50 363 8875

E-mail: [E.T.Kuiper-Drenth@med.umcg.nl](mailto:E.T.Kuiper-Drenth@med.umcg.nl)

Director: Prof. H.W.G.M. (Erik) Boddeke

Secretary: Ms. E.T. (Evelyn) Kuiper-Drenth

Education coordinator: Ms. D.H. (Diana) Koopmans

Course Registration: Ms. J. (Janine) Wieringa

### Chronic Diseases and Drug Exploration (GUIDE)

Visiting address:

Building 3217 “De Brug”, Room 7.31

Ant. Deusinglaan 1

9713 AV Groningen

The Netherlands

Phone: +31 (0)50 363 3163

Fax: +31 (0)50 363 2612

E-mail: [m.t.l.pekelaer@med.umcg.nl](mailto:m.t.l.pekelaer@med.umcg.nl)

Director: Prof. A.J. (Han) Moshage

Secretary: Ms. M.T.L. (Mathilde) Pekelaer

PhD coordinator: Ms. H.M.M. (Riekje) Banus

Course Registration: Ms. M.H. (Maaike) Bansema

Office hours:

Monday – Friday: 9 – 12 a.m.

Closed on Wednesday

### Biomedical Engineering and Materials Science (KOLFF)

Visiting address:

Building 3215, 13th floor

Ant. Deusinglaan 1

9713 AV Groningen

The Netherlands

Phone: +31 50 363 3140

Fax: +31 50 363 3159

E-mail: [h.c.van.der.mei@med.umcg.nl](mailto:h.c.van.der.mei@med.umcg.nl)

Director: Prof. H.C. (Henny) van der Mei

Policy advisor: Ms. W.T.J. (Wya) Kloppenburg

Educational program

coordinator: T.G. (Theo) van Kooten, PhD

### Health Research (SHARE)

Building 3217 “De Brug”, Room 509

Ant. Deusinglaan 1

9713 AV Groningen

The Netherlands

Phone: +31 (0)50 363 2868

Fax: +31 (0)50 363 2406

E-mail: [share@med.umcg.nl](mailto:share@med.umcg.nl)

Director: Prof. R. (Robbert) Sanderman

Secretary: Ms. R.C. (Renate) Kroese

### Research Master’s Programs

In addition to the PhD program the Graduate School of Medical Sciences administrates three Research Master’s Programs:

1. Behavioral and Cognitive Neurosciences (BCN)
2. Clinical and Psychosocial Epidemiology (CPE)
3. Medical and Pharmaceutical Drug Innovation (MPDI)

ad 1. Program coordinator Ms. I.A. (Ika) Neven.  
E-mail: [i.a.neven@umcg.nl](mailto:i.a.neven@umcg.nl)

ad 2. and 3. Program coordinator Ms. D.F. (Désirée) Jansen.  
E-mail: [MastersGSMS@umcg.nl](mailto:MastersGSMS@umcg.nl)

The two-year Research Master's programs offer an excellent preparation for a research career in biomedical or health sciences. Only the best students from all over the world are admitted. Students will be supervised by the most outstanding scientists our University numbers. The training program is intensive and highly interactive. All three programs share the philosophy that research skills are best learned in a "learning by doing" approach.

These programs prepare students excellently for performing a PhD project, and give an extra boost to career perspectives. Talented students have the opportunity to design their own PhD project and the best proposals are granted. After successfully completing one of the Research Master's programs you will receive an MSc degree.

PhD-students have limited access to the Research Master's Programs.

Detailed information:

[www.rug.nl/corporate/onderwijs/opleidingen/ma/opleidingen/croho60617](http://www.rug.nl/corporate/onderwijs/opleidingen/ma/opleidingen/croho60617)

## Information for foreign PhD students

The Medical Faculty has an International Office which provides advice and support to international students and guests. The Office cooperates closely with the International Service Desk of the University of Groningen.

The International Office can provide you with detailed information on a variety of subjects such as, health matters, visas, registration with the municipality, driver's licenses, University facilities, daily life in Groningen, etc.

Detailed Information:

Faculty of Medical Sciences International Office:

[www.rug.nl/umcg/informatievoor/internationalisering/index](http://www.rug.nl/umcg/informatievoor/internationalisering/index)

University of Groningen International Service Desk:

[www.rug.nl/feb/Informatievoor/exchangestudents/practicalInformation/Facilities/ISD](http://www.rug.nl/feb/Informatievoor/exchangestudents/practicalInformation/Facilities/ISD)

## Degree program advisory committee

Due to the size of the organization, the GSMS has several Degree program advisory committees for the Master's programs as well as for the PhD program.

For details, see page 71

## PhD Council

The PhD Council represents the interests of all PhD candidates within the GSMS. The council consists of two PhD students from each of the four research institutes.

E-mail address: [phdcouncilgms@gmail.com](mailto:phdcouncilgms@gmail.com)

BCN: [bcnphdcouncil@list.rug.nl](mailto:bcnphdcouncil@list.rug.nl)

Kolff: [phdcouncilkolff@gmail.com](mailto:phdcouncilkolff@gmail.com)

SHARE: [phdcouncilshare@gmail.com](mailto:phdcouncilshare@gmail.com)

GUIDE:

## PhD Communities at the University of Groningen

There are two PhD associations in Groningen:

**GRIN** (Groningen Graduate Interest Network) which represents and supports the interests and rights of PhD students, and **Gopher** (Groningen Organization for PhD Education and Recreation) organizes informative and social events.

Websites:

[www.gopher.im](http://www.gopher.im)

[www.grin.im](http://www.grin.im)

## Funds and Financing

All GSMS PhD students need to complete the Registration Form to register with the GSMS and one of the four research institutes of the GSMS.

Only *registered* PhD students can participate in courses for free and receive financial support for scientific activities such as external courses, writing their theses, attending conferences etc. Applications forms are available from all the research institute secretaries or can be downloaded from the website.

Financial support to a maximum of € 600 a year p.p. for National and international conferences.

External courses.

Printing costs of the dissertation

All PhD students at the UMCG, receive a financial contribution from the UMCG of € 250. Additional to this, students registered at the Graduate School of Medical Sciences may receive a financial contribution to a maximum amount of € 850 if you meet the criteria on 1) education, 2) speed, 3) quality. Each criterion renders € 200. Information and application form: [http://www.graduateschoolguide.nl/assets/PrintingcostsUMCG-Thesis\\_final.doc](http://www.graduateschoolguide.nl/assets/PrintingcostsUMCG-Thesis_final.doc)

Information for GRIP PhD students

GRIP PhD students must apply for financial support of the printing costs at the Graduate School of Science. Detailed information can be found at <http://www.rug.nl/gradschools/science/index>

**Important!**

GRIP PhD students are registered both in the institute GUIDE of the Graduate School of Medical Sciences (UMCG) and in the Graduate School of Science. They belong to GUIDE and make use of all facilities, and educational and financial GSMS support, mentioned above. Therefore, the GSS ITB (International Training Budget) is NOT applicable to GRIP PhD students.

**Courses**

The Graduate School of Medical Sciences (GSMS) offers a wide range of courses for additional training of PhD students, Top Master's and Research Master's students, and MD/PhD students. Included are courses in general competences, in research specific techniques and in field-specific and interdisciplinary subjects. Also listed are the seminars and meetings organized by the four research institutes.

PhD students have limited access to research master's courses. Research master's students have precedence.

**Study Requirements**

Every PhD student must be registered with the Graduate School. This applies for everyone preparing a PhD thesis. The curriculum has a varied program, which gives all students working on a thesis the opportunity to join courses related to their research and circumstances.

The GSMS curriculum is based on the European Credit Transfer System (ECTS). While carrying out the "standard" four-year research project, 30 ECTS credit points must be earned by taking courses and doing workshops (chosen freely). As there are several categories of PhD students the required number of ECTS credit points varies accordingly:

- 4 years: 30 ECTS
- 3 years: 22.5 ECTS
- 2 years: 15 ECTS

1 ECTS credit point = 28 hours approx. (of contact time or working hours on a subject)  
The GSMS Degree program advisory committee is responsible for assigning the credit points.

Detailed information on all courses starts on page 21.

ECTS credit points can be obtained by:

1. Following courses in the GSMS education program
2. Following courses at other institutes and organizations
3. Following Research Master's program courses
4. Conducting research activities.

In addition to taking courses, it is important that PhD students familiarize themselves with activities related to the transfer of knowledge, such as keeping up with professional literature, participation in work discussion meetings and reference meetings of the student's own research group and - in consultation with their supervisor - of other research groups, active participation in local and national scientific meetings, and in international meetings.

The following research activities will yield ECTS credit points as well, to a maximum of 4 ECTS/yr:

5 workshops/master classes	1
10 seminars	1
Presenting data at international conferences (orally and poster)	0.5
Invited lecture outside institute	0.5
Prize for best abstract/poster/presentation	0.5
Granted project proposal – 1 <sup>st</sup> author	0.5
Summer school	1
(Supervised) reviewing of manuscripts (2)	1
Research stay abroad (minimum 2 weeks)	
• < 1 month	1
• > 1 month	2

Basic teaching qualification (BKO - <i>basis kwalificatie onderwijs</i> , 200 hrs)	8
---	---

**Note:** There may be some deviations in crediting. The degree program advisory committee decides.

Listed below you will find information on all the courses that the GSMS offers. Until the website of the Graduate Schools offers the possibility to register online, we advise you to register for courses by contacting the education coordinator (assistant) or the secretary of the research institute.

**Research Institutes Contact Details**

**BCN**                      **Ms. J. (Janine) Wieringa**  
Tel.                        +31 (0)50 363 7817  
E-mail:                    [janine.wieringa@med.umcg.nl](mailto:janine.wieringa@med.umcg.nl)  
Office hours:            Tuesday and Thursday: 9 a.m. – 2 p.m.

**GUIDE**                    **Ms. M.H. (Maaïke) Bansema**  
Tel.                        +31 (0)50 363 8409  
E-mail:                    [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)  
Office hours:            Monday: 8 a.m. – 4.30 p.m.  
                                  Tuesday: 8 a.m. – 3.30 p.m.  
                                  Wednesday and Thursday: 8 a.m. – 2.30 p.m.

**W.J. Kolff****T.G. (Theo) van Kooten, PhD**

Tel. +31 (0)50 363 3122/3140  
 E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

**SHARE****Ms. R.C. (Renate) Kroese**

Tel. +31 (0)50 363 2868  
 E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)  
 Office hours: Monday – Thursday: 9 a.m. – 5.30 p.m.

**GSMS****Ms. M.H. (Maaïke) Bansema**

Tel. +31 (0)50 363 8409  
 E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)  
 Office hours: Monday: 8 a.m. – 4.30 p.m.  
 Tuesday: 8 a.m. – 3.30 p.m.  
 Wednesday and Thursday: 8 a.m. – 2.30 p.m.

Online course info: <http://www.rug.nl/gradschoolmedicalsciences/index>

The Graduate School offers general courses as well as field-specific and interdisciplinary subjects, organized in the four research institutes. The courses are divided into three research categories:

- I. General Research Competences
- II. Research-specific Techniques
- III. Field-specific and Interdisciplinary Subjects

## Groningen Graduate School Introductory Event

The Groningen Graduate School (GSS) is the umbrella organization of all the faculty-based graduate schools at our University. Its Dean is Professor Lou de Leij. Every PhD student beginning a degree program at the University of Groningen receives an invitation from the Dean to participate in this two-day event.

The course offers a variety of activities, giving an impression of the University and its faculties and facilities, the city and province of Groningen, and a taste of courses and other support activities offered by the University of Groningen graduate schools.

1 ECTS credit point

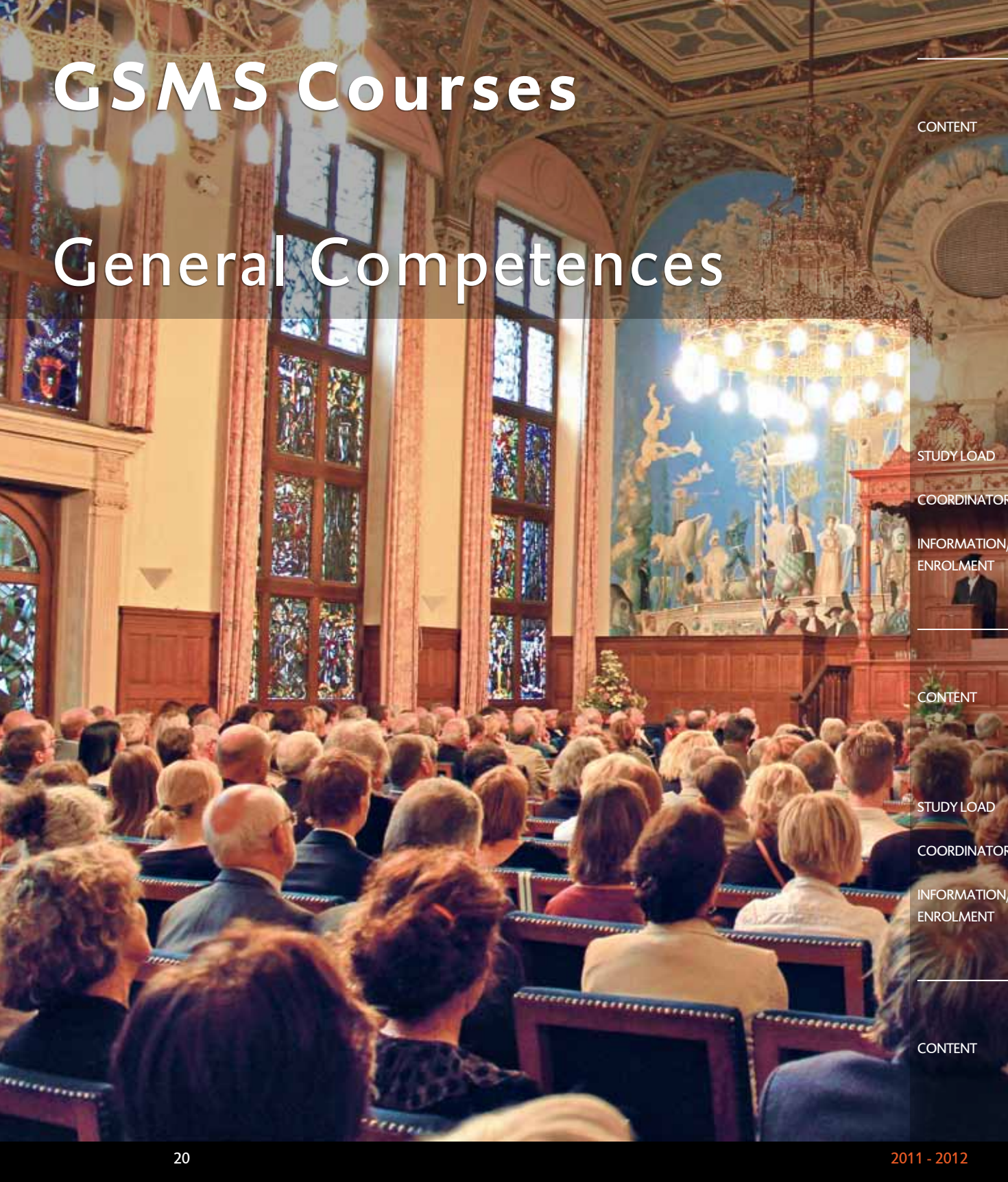
CONTENT

STUDY LOAD



# GSMS Courses

## General Competences



### CONTENT

#### Project Management and GSMS Introduction

The essential elements of working within a project structure; the “interplay of forces” surrounding a project; timetabling; decision-making; managing a project; writing a project assignment; organizational cultures; project-friendly cultures; the consultation interview; the research project phase model.

The participants will not only become familiar with the theory, but will also practice useful skills by means of assignments and exercises.

The course takes one day, including an introduction to the GSMS organization and procedures.

This first day is the start of mentor and follow-up sessions in the 2nd and 3rd year of your PhD research project.

The main topic of these follow-up sessions is the progress of your research project. The sessions last about 3 hours. Note that the follow-ups are compulsory and are especially aimed at preparing the students for completing their thesis within the limited time span of their research period.

### STUDY LOAD

2 ECTS credit points

### COORDINATOR

Prof. G. (Ingrid) Molema

### INFORMATION/ ENROLMENT

Ms. M.H. (Maaike) Bansema

Tel. +31 (0)50 363 8409

E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

### CONTENT

#### Introducing New PhD Students to SHARE

The scientific director, the literature retrieval specialist and the PhD Council will explain their role in the Research Institute and give information on the organization of the Graduate School / research institutes within the UMCG and on the Educational Program for PhD students.

### STUDY LOAD

0 ECTS credit points

### COORDINATOR

Ms D.G. (Truus) van Ittersum

### INFORMATION/ ENROLMENT

Ms. D.G. (Truus) van Ittersum

Tel. +31 (0)50 3636296

E-mail: [d.g.van.ittersum@med.umcg.nl](mailto:d.g.van.ittersum@med.umcg.nl)

### CONTENT

#### BCN Orientation Course

This course will provide general background information for non-specialists concerning major research themes within BCN. The aim of the course is to facilitate multidisciplinary exchange of information and ideas within BCN and to become familiar with the various

groups and their scientific ideas and techniques, with the explicit purpose of stimulating multidisciplinary approaches. A broad overview of research possibilities enables collaboration in unforeseen directions.

The theme of the course: behavioral and cognitive neurosciences as they are represented in the University of Groningen. The course includes presentations on the main scientific questions and the major research techniques that are applied within the BCN research school.

Preliminary Themes

Day 1. Cognition and Language

Day 2. Exercise

Day 3. Intelligence

Day 4. Organization of Behavior

Day 5. Adaptation

Day 6. Emotion

## STUDY LOAD

3 ECTS credit points if treatise is deemed sufficient

## COORDINATOR

Prof. D.G.M. (Domien) Beersma

INFORMATION/  
ENROLMENT

Ms. D.H. (Diana) Koopmans

Tel. +31 (0)50 363 7817

E-mail: [d.h.koopmans@med.umcg.nl](mailto:d.h.koopmans@med.umcg.nl)

Website: [www.rug.nl/bcn/education/phd/standard/index](http://www.rug.nl/bcn/education/phd/standard/index)

## Management Competences in your PhD Project

*(compulsory for BCN)*

## CONTENT

The essential elements of working within a project structure; the project assignment; the “interplay of forces” surrounding a project; timetabling; decision-making; managing a project; writing a project assignment; organizational cultures; project-friendly cultures; the consultation interview; the research project phase model. The participants will not only familiarize themselves with the theory, but will also practice useful skills by means of assignments and exercises. The follow-ups are especially aimed at preparing the PhD students for completing their thesis within the limited time span of their research period.

This course starts with two days. After approximately three months there will be a follow-up session.

## STUDY LOAD

2 ECTS credit points (for participation in the two-day course and the follow-up sessions)

## COORDINATOR

F.W. (Frans) Cornelissen, PhD, A.J.W. (Anton) Scheurink, PhD.

INFORMATION/  
ENROLMENT

Ms. J. (Janine) Wieringa

Tel. +31 (0)50 363 7817

E-mail: [janine.wieringa@med.umcg.nl](mailto:janine.wieringa@med.umcg.nl)

Website: [www.rug.nl/bcn/education/phd/index](http://www.rug.nl/bcn/education/phd/index)

## Ethics of Research on Human Subjects

## CONTENT

Research involving human subjects must first be assessed in terms of medical ethics. Researchers can obtain approval to perform the research from a recognized review committee or, in certain cases, from the CCMO. The Central Committee on Research Involving Human Subjects or CCMO, oversees medical research involving human subjects in the Netherlands. The seminar seeks answers to the following questions: What is the reason for these requirements? Why is a medical ethical assessment required? Which medical ethical guidelines must be followed?

## STUDYLOAD

0.25 ECTS credit point

## COORDINATOR

T.R. (Tjar) Koiter, PhD

Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

T.R. Koiter, PhD

Department of Biomedical Engineering

Tel. +31 (0)50 363 3141/3140

E-mail: [t.r.koiter@med.umcg.nl](mailto:t.r.koiter@med.umcg.nl)

## Scientific Integrity

*(Research Master CPE)*

## CONTENT

Good scientific research is also ethically sound research, but what does this mean in practice? The aim of the course is to introduce the students to the problems and tools of research ethics. Topics covered in the research ethics course address all phases of scientific research from research problem selection, methodology, working with research subjects to issues of international collaboration, commercialization and authorship. The course is designed as an interactive course training students to recognize ethical issues in their daily work and provides the opportunity to discuss ways of dealing with these. This means that institutional tools and other tools will also be discussed, such as the role and functions of Institutional Review Boards, the UMCG protocol and risk-benefit assessments.

List of topics:

- risk-benefit assessments
- informed consent
- privacy and confidentiality of research subjects and data
- ethical issues in epidemiological, social and behavioral research
- responsible conduct of scientific research
- the role and functions of Institutional Review Boards

- vulnerable populations of research subjects
- international research conducted in developing countries
- other special topics (to be determined).

This course is intended in the first place for Research Master's students. If places are available, PhD students can also participate.

## STUDY LOAD

3 or 5 ECTS credit points

## COORDINATOR

Ms. E.L.M. (Els) Maeckelberghe, PhD  
Expertise Center Ethics in Care, UMCG

INFORMATION/  
ENROLMENT

Ms. M.A.J. (Annemieke) Brouwers  
Tel. +31 (0)50 363 7818  
E-mail: [m.a.j.brouwers@med.umcg.nl](mailto:m.a.j.brouwers@med.umcg.nl)

## Scientific Integrity for Researchers

## CONTENT

Researchers have developed professional standards designed to enhance the progress of science and to avoid or minimize the difficulties of research. More and more, these standards are expressed in formal codes that address issues of interpersonal, professional, institutional, and public responsibility: researchers have an obligation towards their fellow researchers in conducting accurate and reliable research; they owe themselves adherence to professional standards to build personal integrity in a research career; they may expect an environment in which research can be conducted in an ethically sound way; and finally, researchers have an obligation to act in ways that serve the public.

These high moral standards play a role in all phases of research, from research problem selection, methodology, working with research subjects to issues of international collaboration, commercialization and authorship. The aim of the course is to introduce the students to the problems and tools of research ethics.

The course is designed as an interactive course training students to recognize ethical issues in their daily work and provides the opportunity to discuss ways of dealing with these. This means that institutional and other tools will also be discussed, such as the role and functions of Institutional Review Boards, the UMCG protocol and risk-benefit assessments.

This course is intended for PhD students, postdoctoral fellows, research associates, research project managers and others.

## STUDY LOAD

1.5 ECTS credit points

## COORDINATOR

Ms. E.L.M. (Els) Maeckelberghe, PhD  
Expert Center Ethics in Care, UMCG

INFORMATION/  
ENROLMENT

Ms. M.A.J. (Annemieke) Brouwers  
Tel. +31 (0)50 363 7818  
E-mail: [m.a.j.brouwers@med.umcg.nl](mailto:m.a.j.brouwers@med.umcg.nl)

## Technical & Ethical Aspects of Digital Image Manipulation

## CONTENT

The use of digital cameras, computers and accompanying imaging software (e.g. Photoshop, Paint Shop, Scion Image, etc.) have made the manipulation of images (such as microscope recordings, protein and DNA gels/blots, bio-scans) an indispensable aspect of today's science. However, the steady technical advances in image acquisition and manipulation also raise important issues as to the limitations of these in generating representative and scientifically justifiable images for presentations and publications. During this workshop, the participants will explore the borderline between "data misrepresentation" and "getting the most out of available technical possibilities" and, in this way, explore the borderlines that separate honest error, negligent error, and scientific misconduct.

The workshop is one afternoon and has an informal structure. Following a word of welcome and introduction by Sven van IJzendoorn, PhD (Department of Cell Biology, UMCG), several cases (fictional and non-fictional) will be presented to provoke lively discussions. Frans van Hoesel, unit head of the Center for High-Performance Computing & Visualization (HPC&V), will speak about the technical details with regard to the possibilities and limitations of digital imaging techniques and software.

## STUDY LOAD

0.5 ECTS credit point

## COORDINATOR

S.C.D. van IJzendoorn, PhD

INFORMATION/  
ENROLMENT

Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Scientific Literature; Searching and Managing, Citations & Impact Factors

*(Research Master CPE)*

## CONTENT

The focus is not only on how to quickly find scientific articles or *best clinical evidence*, but also on how to construct a structured and reproducible search strategy for a literature review or meta-analysis. In addition, students will acquire basic skills in citation management and "CWYW" (Cite While You Write) using Reference Manager software. Further, students practice finding impact factors and citations of journals, articles and authors, and the value of these parameters of impact are discussed. The course consists

of 4 morning workshops (9 a.m. – 12.30 p.m.) concentrated in two weeks. All workshops are a mixture of lectures, demonstrations and hands-on training. During the course, each student will perform a literature search on an epidemiologic research subject and writes a summary completed with a reference list (home assignment).

## STUDY LOAD

1 ECTS credit point

## COORDINATOR

Ms. S. (Sjoukje) van der Werf  
Central Medical Library UMCG

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Critical Appraisal of Literature

## CONTENT

This course is intended in the first place for PhD students beginning their PhD training. The aim of this course is to teach PhD students to assess quality and content of research papers. At the end of the course the student is able to critically analyze the contents of the paper and is able to assess the quality (level of evidence) of the study performed. Students will be able to participate successfully in journal discussions in their own research group.

The course consists of 8 sessions of 2-3 hours in which research designs are critically evaluated. For each meeting, the student will prepare 2 papers – provided by the lecturer in advance – by critically reading and assessing them. During each session the students will discuss their assessment of the papers in small groups. Finally, a group discussion will be held about the quality of the paper and the assessment of criteria.

The next course will not start until late 2011.

## STUDY LOAD

1.5 ECTS credit points

## COORDINATOR

Prof. P.U. (Pieter) Dijkstra, Prof. F.M. (Flora) Haaijer-Ruskamp (coordinators)

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Poster Preparation

## CONTENT

How to prepare a clear poster for a conference will be discussed. Each participant will be asked to bring a poster to the course which will be discussed by fellow PhD students and course teachers.

## STUDY LOAD

0.25 ECTS credit point

## COORDINATOR

T.R. (Tjar) Koiter, PhD  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

E-mail: [t.r.koiter@med.umcg.nl](mailto:t.r.koiter@med.umcg.nl)

## BCN Poster Presentation

## CONTENT

All PhD students will be invited to create a poster about their research and to present it to a small group of fellow PhD students, with one senior BCN researcher functioning as supervisor. Within this group you are also expected to ask questions about other participants' posters.

## STUDY LOAD

1 ECTS credit point

## COORDINATOR

Prof. H.W.G.M. (Erik) Boddeke

INFORMATION/  
ENROLMENT

Ms. J. (Janine) Wieringa  
Tel. +31 (0)50 363 7817  
E-mail: [janine.wieringa@med.umcg.nl](mailto:janine.wieringa@med.umcg.nl)

All registered BCN PhD students and staff members will receive an invitation.

## Presentation Skills

## CONTENT

Participants will learn to deliver an effective presentation in an English-speaking environment. The presentations will take place approximately one week after the theory session. Every participant will deliver a 15-minute presentation in English. The presentations will be recorded on video. Participants analyze their presentations and will receive feedback from group members and coach.

## First meeting:

3 hours of general presentation theory and preparation

## Second meeting:

3 hours of presentations

## Third meeting:

3 hours of presentations

The presentations will take place approximately one and two weeks after the theory session. Every participant will deliver a 15-minute presentation in English. The presentations will be recorded on video. Participants analyze their presentations and will receive feedback from the group members and coach.

**STUDY LOAD**

1 ECTS credit point

**COORDINATOR**W.J.C. (Wim) Tommassen, MA.  
Language Center RUG**INFORMATION/  
ENROLMENT**Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Publishing in English

**CONTENT**

This course focuses on the use of English in scientific publications. Although aspects such as spelling, layout conventions, and structure are included in the course, the emphasis will be on the grammar and style of scientific English in written texts. The main assignment during the semester will be to work on your own writing project. This may be a research publication, review, thesis or other writing. Every four weeks, the participants are to hand in a text of around 1000 words written expressly for the course. Participants should therefore set aside at least 3 hours per week for homework. The lecturer will use these texts to illustrate common mistakes. A handbook and a reader with extensive background material and exercises will also be used during the course.

**Note**

Your English should be quite good in order to follow this class. Although some grammar will be covered in class, the main focus is on writing well.

**STUDY LOAD**

2 ECTS credit points

**COORDINATOR**W.C.J (Wim) Tommassen, MA  
Language Center RUG**INFORMATION/  
ENROLMENT**Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Introductory Course “Writing a Successful Research Proposal” (*Research Master CPE*)

**CONTENT**

The art and skills of creating a successful research proposal will be discussed according to seven “commandments”. The students have to write a short research proposal (500 words maximum. No method, but an introduction, a problem definition, research question/hypothesis, and rationale) which will be discussed during the second meeting.

**STUDY LOAD**

1 ECTS credit point

**COORDINATOR**

Prof. J. (Hans) Ormel

**INFORMATION**Prof. J. (Hans) Ormel (coordinator)  
E-mail: [j.ormel@med.umcg.nl](mailto:j.ormel@med.umcg.nl)**ENROLMENT**Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Science Writing Course

**CONTENT**

The goal of the course is to improve the quality of scientific writing of quantitative research in health research. There will be interactive plenary lectures and coach group meetings.

Various topics will be discussed during the *interactive lectures*. Students may be asked to complete assignments prior to the lectures. The students will also be expected to set up and manage citation alerts. During the interactive lectures the students will be provided with (parts of) draft manuscripts and are asked to furnish the manuscript with an abstract, title or keywords. In addition, data will be given and students will be asked to construct a table or a figure.

The *coach groups* will consist of 4 to 5 students and a coach. The students will send (parts) of concept manuscripts to the coaches one week prior to the next meeting. The coaches and the other students in the coach groups will provide the students with feedback about concept manuscripts. Feedback will be given using e-mail/Blackboard.

The interactive lectures will be given in 2 to 3-hour sessions. The coach group meetings will take 1 to 2 hours. There will be around 8 lectures and 4 coach group meetings. The course will take over 5 months.

**STUDY LOAD**

2 ECTS credit points

**COORDINATOR**

Prof. R. (Robbert) Sanderma, Prof. P.U. (Pieter) Dijkstra.

**INFORMATION/  
ENROLMENT**Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## “Thesis defence in Sight” (*“Promotie in zicht”*)

**CONTENT**

Twice a year, SHARE organizes a meeting with fellow PhD students who will be defending their thesis within six to eight months. We discuss such matters as: rules and regulations; habits; how to handle comments by the reading committee; how to plan THE DAY; costs and possibilities for funding of the thesis printing costs. The meeting will be in Dutch, unless it is really necessary to switch to English.

#### STUDY LOAD

0 ECTS credit points

#### COORDINATOR

Ms. D.G. (Truus) van Ittersum

#### INFORMATION/ ENROLMENT

Tel. +31 (0)50 363 6296  
E-mail: [d.g.van.ittersum@med.umcg.nl](mailto:d.g.van.ittersum@med.umcg.nl)

## Choosing your Career in Life Sciences

#### CONTENT

Many life scientists have to make a choice as to whether to pursue a career in science or in an innovative company. The Summer School offers an excellent opportunity to think about the next move. For non-life scientists, the Summer School offers the opportunity to become more acquainted with the life sciences sector. Multidisciplinary teams are of utmost importance for a successful entrepreneurial company.

Workshops are led by top researchers, experienced entrepreneurs and business school professors who share their experiences on various topics, such as:

- Do's and don'ts of a tenure track
- Creating value from intellectual property
- Obtaining seed or start-up capital
- How to apply for grants
- How to build a scientific consortium
- How to turn a research idea into a business concept
- Characteristics required for becoming a successful entrepreneur.

#### STUDY LOAD

2 ECTS credit points

#### COORDINATOR

Stichting Business Generator Groningen

#### INFORMATION/ ENROLMENT

Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Survival Dutch

#### CONTENT

The Graduate School of Medical Sciences (GSMS) offers a course "Survival Dutch" for non-Dutch-speaking Master's and PhD students at the UMCG. Keep in mind that this course is a first introduction to Dutch. If you have already studied Dutch, you should not enroll in this course. At the end of the course your level should be near level 2 of the University of Groningen Language Centre.

#### STUDY LOAD

0 ECTS credit points

Coordinator: Ms. J.M. (Jennie) van Huizen  
Institute for Medical Education

#### COORDINATOR

Ms. J. M. (Jennie) van Huizen

#### ENROLMENT

Secretary of Institute (BCN, GUIDE, SHARE or W.J. Kolff)  
Contact information on pages 12 and 13

# GSMS Courses

## Research specific Techniques



Admission

General

Research specific

Field specific

Meetings

External

### Design and Data Analysis of Micro-array Expression Studies

#### CONTENT

Micro-array platforms (such as Affymetrix, Agilent, Illumina)  
Data formats and archives, array databases  
Experimental designs  
Statistical data analysis: low level, cluster analysis, multiple testing etc. Gene annotation tools, networks  
Practical applications for clinical and scientific research.

#### FORMAT

10 half-days, mainly in the morning (9 a.m. – 12.30 p.m.). Lectures and practical computer exercises. Literature studies. Case studies.

#### STUDY LOAD

2 ECTS credit points

#### COORDINATOR

Prof. H. (Harold) Snieder

#### INFORMATION/ ENROLMENT

Tel. +31 50 361 0887  
E-mail: [h.snieder@epi.umcg.nl](mailto:h.snieder@epi.umcg.nl)

### Design, Conduct and Evaluation of a Clinical Trial

#### CONTENT

This course provides an insight in the area of clinical trials with patients, with more detailed coverage of trial, analysis and interpretation of phase IIb-IV studies from the point of view of clinical research, industry and government.

The course is organized in collaboration with the Clinical Pharmacology and TCC (Trial Coordination Centre). The course is based on interactive exercises and will be presented by means of *capita selecta* and practicals within the framework of students' own to-be-designed clinical trial.

The course lecturers will review important information regarding the practical issues in the design of clinical trials and protocol development, as well as broader issues related to the initiation and conduct of clinical trials and the analyses and interpretation of clinical trial data.

#### Students will learn:

- Basic statistical concepts, such as descriptive statistics, hypothesis testing, estimation, confidence intervals, different statistical tests, etc. Biomedical applications are discussed for each topic.
- Fundamentals of clinical trial design. Topics include definition of hypotheses, measures of effectiveness, sample size, randomization, interim analysis, safety considerations and issues in statistical analysis.

- Ethical and regulatory issues in the design conduct and reporting of research will be examined. Topics include GCP, informed consent, patient information, and institutional review boards.
- Coordinating clinical trials – issues will be addressed regarding coordinating a clinical trial. It covers organizational aspects, forms design and collection, quality control and other operational methods to improve the quality of data.

STUDY LOAD 3 ECTS credit points

COORDINATOR Prof. H. (Hans) Hillege, Ms. J.A. (Janneke) Bergsma, PhD

INFORMATION/  
ENROLMENT Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Epidemiology and Applied Statistics

CONTENT

Students will learn about the concepts, principles, and methods in epidemiology. The participants will familiarize themselves with study designs, methodological problems, statistical analyses and causal inference. The skills learned in this course are of importance when conducting research as well as when evaluating published research.

In the first week the student will become acquainted with the field of epidemiology and gain knowledge on research designs, measures of frequency and association. By the end of the week a research question is formulated, for which data have to be analyzed during the course. Further, a start is made with the applied statistics.

In the second week the student will familiarize themselves with the concepts of validity and precision, bias, confounding and effect modification. The student will gain knowledge about correlations, univariate and multiple regression analyses, and their applications in SPSS. The final statistical analyses are performed (including interaction and stratification). Students will give an oral presentation of 10 minutes on their research question (analyses, results, conclusion, discussion), followed by a general discussion.

### Topics include:

- Study population
- Study designs (cross-sectional/ longitudinal, descriptive/ experimental, case-control/ cohort/ intervention)
- How to formulate a research question and to make it operational
- Measures of frequency: prevalence/ incidence, risk difference, population attributable risk
- Measures of effect: relative risk (RR), odds ratio (OR)
- Methodological problems: precision/ validity, selection bias/ information bias/ confounding
- Possible ways to deal with confounding in the study design (matching, randomization)
- Causality
- Descriptive statistics (plots, distribution, group differences)

STUDY LOAD 3 ECTS credit points

COORDINATOR Prof. H.M. (Marïke) Boezen

INFORMATION/  
ENROLMENT Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## BCN Statistics

CONTENT

The objective of this course is to refresh and augment your basic statistics knowledge. We aim at providing you with an overview of the relevant aspects of using statistics in the cognitive and behavioral sciences. This includes knowledge on the theory of statistical procedures, their aims, their interpretation and their application in practice.

*Final attainment level:* After the course, you are able to select an appropriate statistical method for the most frequent occurring data-analysis problems in the cognitive and behavioral sciences.

*Required entrance knowledge:* the course is not an elementary course in statistics, but more of a refresher course. Even though elementary statistical concepts are briefly discussed, without prior knowledge of statistics (at least general statistical principles and concepts, regression analysis, analysis of variance) the course will be impossible to follow.

STUDY LOAD 2 ECTS credit points

COORDINATOR Ms. E.M.L.A. (Edith) van Krimpen-Stoop, PhD

INFORMATION/  
ENROLMENT D.H. (Diana) Koopmans  
Tel. +31 (0)50 363 7817  
E-mail: [d.h.koopmans@med.umcg.nl](mailto:d.h.koopmans@med.umcg.nl)

## Medical Statistics

CONTENT

The course is intended to refresh and deepen basic knowledge of statistical and methodological aspects of the design and evaluation of quantitative health care research projects. Students will learn to carry out statistical analyses using the SPSS package, with emphasis on the interpretation and understanding of statistical methods.

STUDY LOAD 3 ECTS credit points

COORDINATOR

V. (Vaclaw) Fidler, PhD

INFORMATION/  
ENROLMENT

To apply, please use the application form on the website:  
[www.rug.nl/umcg/faculteit/disciplinegroepen/epidemiologie/medicalStatistics](http://www.rug.nl/umcg/faculteit/disciplinegroepen/epidemiologie/medicalStatistics)

Ms. P. (Petra) Wetterauw  
Dept. of Epidemiology, UMCG  
Tel. +31 (0)50 361 0739  
E-mail: [p.wetterauw@epi.umcg.nl](mailto:p.wetterauw@epi.umcg.nl)

WEBSITE

[www.EpidemiologyGroningen.nl](http://www.EpidemiologyGroningen.nl)

## Genetic Epidemiological Research and Data Analysis

CONTENT

In this course the participants will learn about the basic principles of genetic (epidemiological) research with a focus on family-based heritability and linkage studies as well as population-based candidate gene and genome-wide association studies. The relevant background of human genetics and statistics will be explained during interactive theoretical classes taught by experts.

The basics of human genetics will include concepts such as DNA, single nucleotide polymorphisms, and haplotypes. Lectures will include research-related issues such as the strengths and weaknesses of different study designs, the effect of population structure and population stratification, and multiple comparisons issues.

The theoretically acquired knowledge of human genetics and statistics will be applied in practical classes. Participants will familiarize themselves with study design issues (tagging strategies, power calculation) and the basic statistics that are necessary to analyze genetic data such as descriptive data analyses, Hardy-Weinberg and Linkage Disequilibrium testing, testing of genotype effects in different types of data, and learn about approaches to deal with the multiple testing issues. Common (freely available) statistical programs to perform genetic data analysis will be used, such as Mx, SOLAR, HaploView, MDR, PLINK, etc.

At the end of the course the participant will be able to interpret the findings of a wide range of genetic epidemiological study designs, and apply several basic forms of genetic data analysis.

STUDY LOAD

1.5 ECTS credit points

COORDINATOR

Prof. H.M. (Marika) Boezen

INFORMATION/  
ENROLMENT

Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

CONTENT

## Psychiatric Epidemiology (Research Master CPE)

This course addresses the distinctive features of psychiatric epidemiology as compared to somatic disease epidemiology and the implications of these differences for the design, implementation and interpretation of research on mental disorders.

Important components of the course include: incidence, prevalence, clustering and natural history of mental disorders; social and economic consequences including work on disease burden; and – at an introductory level – major etiological models, including proximal and distal determinants. Students will be introduced to instruments and measures of psychiatric epidemiology such as CIDI, SCAN, Life History Chart and Personality.

STUDY LOAD

4 ECTS credit points

COORDINATOR

Prof. P. (Peter) de Jonge

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

CONTENT

## Public Health Epidemiology (Research Master CPE)

This course covers the principles of epidemiologic research aiming to provide the evidence base for community-based screening and primary prevention. Regarding screening, topics concern methods to estimate the burden of disease due to specific causes, to assess the potential effects of early treatment, and to examine the properties of community-based diagnostic tests. Associated measures are i.e. the population-attributable risk, effect size and sensitivity, specificity and positive and negative predictive values. With respect to primary prevention, attention will be paid to the specific requirements for performing community-based interventions, such as the design of studies. Strategies for randomization such as individual and cluster-based randomization will be discussed and quasi-experimental studies will be introduced. As regards the analyses, associated statistical methods such as ordinary regression and multilevel analyses will be discussed. Finally, problems met in practical data collection and potential solutions will be provided as a hands-on start for research projects in public health.

STUDY LOAD

4 ECTS credit points

COORDINATOR

Ms. U. (Ute) Bültmann, PhD, Prof. S.A (Menno) Reijneveld

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Study Design in Clinical Epidemiology

*(Research Master CPE)*

### CONTENT

In this course the principles and practice of epidemiological research are taught. The emphasis in this course is on study design. A distinction is made between theoretical design including design of the research question and operational design comprising data collection and data analysis. The dichotomies in the classification of (clinical) epidemiologic research, i.e. observational / experimental, cohort / case-control, cross-sectional/ longitudinal and their relevance to epidemiologic research will be discussed. A further distinction will be made between etiologic studies including intervention studies (clinical trials) and predictive studies (diagnostic and prognostic studies). Issues of validity and precision will be extensively addressed. Lectures will be combined with exercises using current examples of epidemiological studies on mostly chronic diseases. Reviewing recently published studies with different study designs are an important part of this course. The aim is to provide the participants with the knowledge to evaluate and judge epidemiological research and data analysis, and give a sufficient scientific and methodological background to actively participate in epidemiological studies.

### STUDY LOAD

4 ECTS credit points

### COORDINATOR

Prof. R.P. (Ronald) Stolk

### INFORMATION/ ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Measuring Concepts in Quantitative Research

*(Research Master CPE)*

### CONTENT

This course deals with the process of operationalizing, i.e. the translation of theoretical concepts into measurement instruments. The role that validity and reliability play in this process will be dealt with in depth. Attention will be focused on the construction and use of multi-item measurement scales. Also determining relevant effects and the relation with sample size (power) will be discussed. Statistical tools such as factor analysis, and reliability assessment will be dealt with. Students will have to do several exercises: developing a questionnaire, creating scale-scores from an existing dataset, judging and investigating the structure of an existing questionnaire. Students will learn how to develop good measurement instruments, and how to judge existing instruments.

### STUDY LOAD

2 ECTS credit points

### COORDINATOR

F.L.P. (Eric) van Sonderen, PhD

### INFORMATION/ ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Incomplete Information: Non-response, Attrition, and Missing Data

### CONTENT

This course focuses on several causes for incomplete information. How it occurs, its negative consequences and when and how to prevent and repair matters. Students will have ample opportunity to practice with datasets. Students learn about a broad variety of types of incomplete information that can threaten both the representativeness and power of the study. Techniques to prevent or repair missing data are also dealt with.

### STUDY LOAD

2 ECTS credit points

### COORDINATOR

F.L.P. (Eric) van Sonderen, PhD

### INFORMATION/ ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Multivariate Analyses: How to Handle Three Variables

### CONTENT

The three main types of “third variable effects”, interaction, confounding, and mediation, are dealt with in depth. Students will have ample opportunity to practice with datasets. Students will learn about the ways one or more “third variables” can influence the relationship between the two focal variables. Students will learn to use a theoretical model to handle interaction, confounding and mediation.

### STUDY LOAD

2 ECTS credit points

### COORDINATOR

F.L.P. (Eric) van Sonderen, PhD

### INFORMATION/ ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Clinical Relevance versus Statistical Significance

### CONTENT

Compared to statistical significance, little attention is paid to the importance of “clinical relevance” in scientific research. In this short course, the role clinical relevance plays in sample size determination (power), describing the results, and statistical testing is dealt with. Special attention is paid to determining relevance in questionnaire-based patient-related research. Students learn to determine and define a clinically relevant effect, and how to apply this information during several stages in the scientific process.

### STUDY LOAD

1 ECTS credit point

COORDINATOR F.L.P. (Eric) van Sonderen, PhD

INFORMATION/  
ENROLMENT Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Working with Questionnaires in Patient-related Research

CONTENT In patient-related research questionnaires are often used that may not be optimally equipped for the research question at hand. Precise formulation of the concept being assessed will be dealt with as well as the subsequent steps needed to appraise candidate questionnaires. Students will learn to critically evaluate multi-item instruments that are used in patient-related research, with respect to their suitability, validity and reliability.

STUDY LOAD 1 ECTS credit point

COORDINATOR F.L.P. (Eric) van Sonderen, PhD

INFORMATION/  
ENROLMENT Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Qualitative Research Methods

CONTENT This course aims at introducing students to the nature of qualitative research and its keys concepts.

Topics covered include:

- formulating qualitative research questions
- in-depth interviews
- focus groups
- participatory observation
- coding
- data analysis
- ethical issues.

STUDY LOAD 1 ECTS credit point

COORDINATOR Prof. M.A. (Marian) Verkerk

INFORMATION/  
ENROLMENT Ms. M.A.J. (Annemieke) Brouwers  
Tel. +31 (0)50 363 7818  
E-mail: [m.a.j.brouwers@med.umcg.nl](mailto:m.a.j.brouwers@med.umcg.nl)

## Good Manufacturing Practice: GMP

CONTENT The aim is to gain insight into the various aspects of the regulations of good manufacturing practice based on Dutch and European rules (Volume 4) and the impact these regulations have on the actual production of drugs. The current philosophy of quality management and quality systems as laid down in the ICH documents Q8, Q9 and Q10 will be discussed. On the basis of Annex 13 (Manufacture of investigational medicinal products) important aspects such as documentation, the determination of specifications, procedures and change control will be discussed. The various parts of validation will come up with Annex 15. Conditions as to production and sterilization will be discussed on the basis of Annex 1. The participants will develop a production process and validate it under GMP to prepare this process for inspection.

STUDY LOAD 1 ECTS credit point

COORDINATOR H. (Hans) van Doorne, PhD, Prof. H.W. (Erik) Frijlink.

INFORMATION/  
ENROLMENT Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Good Research Practices: GCP/GLP

CONTENT The course takes place during seven days from 9 a.m. to approximately 3 p.m. and is a mixture of lectures, site visits to a GCP-certified clinical research center and a GLP-certified laboratory, demonstrations, interactive video training and case studies (group presentations). Participation requires thorough preparation studying abstracts and literature, which will be provided before the start of the course, and doing active research of the subject on the Internet.

- general principles of quality management applied to drug research: Good Research Practices: GxPs
- legal and ethical aspects of new drug development
- Good Clinical Practice (GCP) (ethical aspects: preparing, performing and evaluating a clinical study with a potential new medicine)
- Good Laboratory Practice (GLP) in the Bioanalytical Laboratory and Analytical Laboratory; preparing, performing organizational and technical aspects and evaluating a bioanalytical or analytical study
- Bioanalysis and analysis in the context of new drug development according to GLP
- Implementation of GxPs
- Compliance with GxPs

STUDY LOAD 3 ECTS credit points

COORDINATOR Prof. J.H.G. (Jan-Hasker) Jonkman

Ms. M.H. (Maaike) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

## Cellular Imaging

CONTENT

The program offers interactive discussion with speakers, demonstrations of advanced imaging in the first week, and guidance in implementing cellular imaging in your own project. Several companies have provided demonstration equipment. To fully benefit from the course you will need to follow the complete program. You will have to prepare in advance, with the work load during the first week being especially significant.

Topics include fluorescence microscopy, electron microscopy, probes, live-cell imaging, data acquisition and analysis. The focus is on implementation of technical aspects in participants' PhD projects. The course will feature national and international lecturers and a mini-symposium. Given the focus on practical implementation, the group size is limited.

STUDY LOAD

4 ECTS credit points

COORDINATOR

B.N.G. (Ben) Giepmans, PhD

INFORMATION/  
ENROLMENT

Ms. G. (Greetje) Noppert  
Tel. +31 (0) 50 363 2522  
E-mail: [g.noppert@med.umcg.nl](mailto:g.noppert@med.umcg.nl)

WEBSITE

[www.cellbiology.nl](http://www.cellbiology.nl)

## Image Analysis

CONTENT

Images are an important aspect of research data. They used to be of photographic origin, but in the last decade the use of equipment that generates digital images has steadily increased. Furthermore, the use of professional and semi-professional scanners and digital photo cameras has increased the access to digital images. Images can be a rich source of data, but frequently they are merely used as an illustration to emphasize other qualitative data. Image analysis techniques may allow us to derive quantitative data from the images themselves. Most tools are based on pixel operations in either grey value images or binary images. The combination and repetition of tools yields a powerful repertoire of processing and measuring possibilities. A selection of these tools will be explained. The effects of these tools on representative images will be studied using demonstrations and practice sessions.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering, W.J. Kolff Institute

T.G. (Theo) van Kooten, PhD  
Tel. +31 (0)50 363 3122/3140  
E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

## BCN Introductory fMRI Course

CONTENT

The BCN-NIC introductory fMRI course is hands-on, and gives the participants an introduction to all aspects of a real fMRI experiment. The course provides insights into the basics of the MR technique and MR safety, the physiology underlying the fMRI BOLD signal, paradigm design, stimulus presentation, data handling and statistical analysis. Participants work in small groups on a self-chosen topic, design and carry out a small fMRI experiment, analyze the data and present the results to their fellow course members.

STUDY LOAD

1.5 ECTS credit points

COORDINATOR

R.J. (Remco) Renken, PhD

INFORMATION/  
ENROLMENT

Ms. H.P.W.M. (Hedwig) van Oosten  
NeuroImaging Center  
E-mail: [h.p.w.m.van.oosten@med.umcg.nl](mailto:h.p.w.m.van.oosten@med.umcg.nl)  
Tel. +31 (0)50 363 5111  
Fax: +31 (0)50 363 8875

WEBSITE

[www.bcn-nic.nl](http://www.bcn-nic.nl)

LOCATION

NeuroImaging Center, Antonius Deusinglaan 2, Groningen

## In Vivo Imaging Analysis

CONTENT

In Vivo Optical Imaging is a non-destructive technique which enables direct monitoring of luminescent or fluorescent cells and microbes in vivo (both in animal models and humans). This technique has recently been successfully applied in oncological studies with luminescent cell lines that would otherwise require histopathology to identify, as well as in bio-adhesion studies with fluorescently labeled and luminescent bacteria which study the development of bacterial bio-layers that cause biomaterial associated infections. The course will evaluate the optical technique, stressing the quantification of the optical IVIS image. To this end, relevant optical principles will be discussed such as the origin and character of bioluminescence and fluorescence, scattering and absorption in tissue affecting the intensity of the image, the theory of radiance and the first principles of optical 3D tomography enabling the exact location of the light emitting source inside the body, spectral unmixing, image acquisition and image processing. A number of fluorescent probes will be discussed in relation to the cell metabolism with which they interfere. The several advantages of the system for diverse applications as well as on the pitfalls and concerns to deal with while applying the technique will also be dealt with.

STUDY LOAD	0.25 ECTS credit point
COORDINATOR	J. (Han) Sjollema, PhD Department of Biomedical Engineering, W.J. Kolff Institute
INFORMATION/ ENROLMENT	J. (Han) Sjollema, PhD Tel. +31 (0)50 363 3149 E-mail: <a href="mailto:j.sjollema@med.umcg.nl">j.sjollema@med.umcg.nl</a>

## Microscopy

CONTENT	The aim of this course is to create a basic understanding of the principles of light and electron microscopy. In addition, students learn how microscopy can be used in performing research. Several microscopic techniques will be highlighted in the course.
STUDY LOAD	0.25 ECTS credit point
COORDINATOR	T.G. (Theo) van Kooten, PhD Department of Biomedical Engineering, W.J. Kolff Institute
INFORMATION/ ENROLMENT	T.G. (Theo) van Kooten, PhD Tel. +31 (0)50 363 3122/3140 E-mail: <a href="mailto:t.g.van.kooten@med.umcg.nl">t.g.van.kooten@med.umcg.nl</a>

## Functional Neuroscience: EEG – BCN Part

CONTENT	In addition to learning about their theoretical backgrounds, participants will become acquainted with EEG hardware and software. The last part of the course consists of an introduction to Brain Vision Analyzer, which will allow all students to analyze the data they recorded on the previous days.
STUDY LOAD	3 ECTS credit points
COORDINATOR	Ms. M.M. (Monique) Lorst
INFORMATION/ ENROLMENT	Ms. D.H. (Diana) Koopmans E-mail: <a href="mailto:d.h.koopmans@med.umcg.nl">d.h.koopmans@med.umcg.nl</a>

## Laboratory Animal Science

CONTENT	The objective of the course is to educate course participants in the field of Laboratory Animal Science. Scientists who are responsible for the design and conduct of animals experiments must not only be educated in one of the biomedical sciences (biology, medicine, veterinary medicine, pharmacy, etc.), but should also have taken a course in
---------	--

laboratory animals science, encompassing welfare issues, ethical aspects and alternatives to animal experiments. This requirement has been made compulsory by Dutch law (Article 9, Experiments on Animals Act).

The course is only for PhD students actively involved in animal experiments.

In principle, the course is organized for University of Groningen PhD students and graduate students originating from the fields of medicine, veterinary science, dentistry, medical biology and pharmacy. If you have an academic background in a different area, participation is possible under certain conditions and to a certain extent. The course coordinator will deal with individual requests. The course is a good introduction for students who have the intention to become a scientist in an area in which animal experimental work is performed.

The course will take 3 weeks. A number of lectures, workshops, practicals and a presentation are planned in week 1 and 2. Week 3 ends with a written exam.

The course covers a multidisciplinary range of subjects including legislation, experimental design, microbiology, anesthesia, analgesia, peri-operative care, stress/wellbeing and behavior, experiments on animals living in the wild, pathology, housing and care, ethics, etc.

STUDY LOAD	4.5 ECTS credit points
COORDINATOR	Ms. C.M.A. (Catriene) Thuring, PhD
INFORMATION/ ENROLMENT	Ms. L. (Linda) van der Woude Tel. +31 (0)50 363 2631 E-mail: <a href="mailto:cdp-cursus@med.umcg.nl">cdp-cursus@med.umcg.nl</a>
WEBSITE	<a href="http://www.rug.nl/umcg/faculteit/commissie/dierenexperiment/proefdierdeskundige">www.rug.nl/umcg/faculteit/commissie/dierenexperiment/proefdierdeskundige</a>

## Microbiological Safety

CONTENT	The course covers the following topics: general manual skills and techniques relevant to the isolation of (potentially) pathogenic micro-organisms; extinction rate of bacteria outside a culture; disinfection and sterilization; escape by contamination and aerosols; checking for cleanliness; working in a safety cabinet; and applying for a permit for genetic modification. Some theoretical background will be provided as well as a summary of Dutch legislation on genetic modification.
STUDY LOAD	1 ECTS credit point
COORDINATOR	B.L. (Barry-Lee) Waarts, PhD Medical Microbiology

B.L.Waarts, PhD  
Tel. +31 (0)50 361 4880  
E-mail: [b.l.waarts@mmb.umcg.nl](mailto:b.l.waarts@mmb.umcg.nl)

## Microsurgery

### CONTENT

Emphasis of this course is placed on several important learning concepts, such as: mind set prior to beginning work, self-control and patience during it, knowledge of delicate anatomical structures (small vessels and nerves), the surgical approach involved, and an efficient way to complete a patent micro-vascular anastomosis within a given time limit. The course involves three days of intensive instruction in microsurgical techniques, including the use of the operating microscope, micro-instruments, micro-sutures and surgically prepared animal models. The learning process is conducted through one-on-two lessons, and is closely monitored by the instructor, who provides guidance through feedback and skill evaluation throughout the entire course.

Procedures taught:

1. Use of the surgical microscope
2. Information about instruments, anesthesia, peri-operative care and asepsis
3. Basic suturing techniques using a plastic model (PVC-rat)
4. Jugular vein catheterization (stress free blood sampling)
5. Dissection techniques (aorta / vena cava)
6. Performing end-to-end arterial anastomoses (rat)
7. Practical test: arterial anastomoses (rat)
8. Techniques on request (rat and mouse)

### STUDY LOAD

1 ECTS credit point

### COORDINATOR

Ms. A. (Annemieke) Smit-van Oosten, PhD

### INFORMATION/ ENROLMENT

Ms. A. (Annemieke) Smit-van Oosten, PhD  
Tel. +31 (0)50 363 2998  
E-mail: [a.smit-van.oosten@med.umcg.nl](mailto:a.smit-van.oosten@med.umcg.nl)

## Quartz Crystal Microbalance (QCM) and Low Load Mechanical Tester (LLMT)

### CONTENT

In this lecture two different techniques will be explained. QCM is a very sensitive balance which can accurately measure attached mass on a surface both in dry and wet conditions (having a mass sensitivity of 18 pg/mm<sup>2</sup>). Under wet conditions adsorption of polymers such as proteins on surfaces is a very relevant phenomenon with regard to biomaterials placed inside the human body. QCM not only measures the adsorbed mass but also tells us about the mechanical properties of the adhered mass which is connected to the polymer configuration and arrangement. During the lecture,

### STUDY LOAD

0.25 ECTS credit point

### COORDINATOR

P.K. (Prashant) Sharma, PhD  
Department of Biomedical Engineering, W.J. Kolff Institute

### INFORMATION/ ENROLMENT

P.K. (Prashant) Sharma, PhD  
Tel. +31 (0)50 363 3160  
E-mail: [p.k.sharma@med.umcg.nl](mailto:p.k.sharma@med.umcg.nl)

## SMBWO Immunology Course on HLA Typing and HLA Antibodies

### CONTENT

A three-day course consisting of lectures on human leukocyte antigens (HLA), HLA typing, antibodies against HLA and organ transplantation. Participants will perform a serological and molecular HLA class I and II typing.

### STUDY LOAD

1 ECTS credit point

### COORDINATOR

Ms. C. (Caroline) Roozendaal, PhD

### INFORMATION/ ENROLMENT

Ms. C. (Caroline) Roozendaal, PhD  
Tel. +31 (0)50 361 4042  
E-mail: [c.roozendaal@lc.umcg.nl](mailto:c.roozendaal@lc.umcg.nl)

## Surface Characterization

### CONTENT

During this course, you will learn how to determine wettability by contact angles, charge by zeta potentials or streaming potentials, elemental surface composition by X-ray electron spectroscopy and surface roughness by atomic force microscopy. Furthermore, you will learn what you can further do with the introduced equipment and how to handle the data from the measurements.

### STUDY LOAD

0.25 ECTS credit point

### COORDINATOR

Prof. H.C. (Henny) van der Mei  
Department of Biomedical Engineering, W.J. Kolff Institute

Prof. H.C. (Henny) van der Mei  
Tel. +31 (0)50 363 3124/3140  
E-mail: [h.c.van.der.mei@med.umcg.nl](mailto:h.c.van.der.mei@med.umcg.nl)

## Techniques in Molecular Biology

## CONTENT

Theoretical background concerning structure and function of DNA, RNA and proteins, at textbook level, and familiarity with basics of laboratory manipulation are prerequisites for attending the course. In case of any doubts, please contact the course director prior to the course.

Prior to the course, participants will receive sets of questions to brush up basics of molecular biology. The course director will deal with applicants' answers individually by e-mail.

A provisional time sheet of the course will be sent out by e-mail in due time. The final course book and accompanying material will be sent out one to two weeks before the start of the course by regular mail.

Upon successful completion of the course, the participants will receive a certificate.

The following topics will be dealt with experimentally: plasmid isolation and characterization, transfection, Western blotting, PCR applications and derivatives like Real Time PCR, primer design, RNA interference, immuno-detection, fluorescence: GFP, FACS.

## STUDY LOAD

4 ECTS credit points

## COORDINATOR

Ms. M.G.L. (Marja) Brinker, PhD

INFORMATION/  
ENROLMENT

Ms. M.H. (Maaïke) Bansema  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)  
Tel. +31 (0)50 363 8409

## Working with Isotopes

## CONTENT

Students will learn to safely handle radioactive tracer substances and apply them in biological research, and will gain an insight into techniques for radiation detection. The course, including a theoretical and a practical part, ends with an examination. A positive mark entitles the participant to receive a level 5b certificate, which is needed to obtain a permit to handle radiation sources.

The following topics will be dealt with: principles of radioactivity, radioactive decay, radiation hazards and protection, dosimetry, scintigraphy, gamma spectrometry, autoradiography, etc.

## STUDY LOAD

The practical classes will be devoted to working safely with radiation sources, measuring various types of radiation, shielding radiation sources, and applying radioactive substances in biological research.

2 ECTS credit points

## COORDINATOR

E.J. (Arjo) Bunscoeke  
Life Sciences

INFORMATION/  
ENROLMENT

E.J. (Arjo) Bunscoeke  
Tel. +31 (0)50 363 2410  
E-mail: [e.j.bunscoeke@rug.nl](mailto:e.j.bunscoeke@rug.nl)

## Working with Radioactive Substances

*(levels 5a/5b) – Health, Safety and Environment Service  
(Arbo- en Milieudienst)*

## CONTENT

This course acquaints students with the practice of working with radioactive materials in a C laboratory. Upon completion of the course, the participants will be able to work unsupervised in the C lab as part of their research projects.

## STUDY LOAD

2 ECTS credit points

## COORDINATOR

Health, Safety and Environment Service RUG *(Arbo- en Milieudienst)*

INFORMATION/  
ENROLMENT

Secretariat of the Health, Safety and Environment Service  
Tel. +31 (0)50 363 5551  
E-mail: [AMD@rug.nl](mailto:AMD@rug.nl)

## WEBSITE

[www.rug.nl/bureau/expertisecentra/amd/straling/strcursusinformatie/index](http://www.rug.nl/bureau/expertisecentra/amd/straling/strcursusinformatie/index)

## X-Ray Photoelectron Spectroscopy

## CONTENT

XPS can be used to determine the elementary composition of solid surfaces. How this technique works will be explained and which information it may provide. Anyone doing research on surfaces needs to know the chemical composition of the surfaces involved in order to know why tissue cells or bacteria behave in a certain way.

## STUDY LOAD

0.25 ECTS credit point

## COORDINATOR

Prof. H.C. (Henny) van der Mei  
Department of Biomedical Engineering, W.J. Kolff Institute

INFORMATION/  
ENROLMENT

Prof. H.C (Henny) van der Mei  
Tel. +31 (0)50 363 3124/3140  
E-mail: [h.c.van.der.mei@med.umcg.nl](mailto:h.c.van.der.mei@med.umcg.nl)

# GSMS Courses

## Field specific & interdisciplinary Subjects



CONTENT

### Advanced Drug Delivery & Drug Targeting

In recent years, new chemical and biotechnological entities have been developed and several of these compounds have already entered the stage of preclinical and clinical development. In the development of new products, one of the main scientific challenges is to deliver the drug in a controlled way at the desired site of action.

The Advanced Drug Delivery & Drug Targeting course will be given by experts in the fields of:

- Drug formulation and delivery via various routes of administration
- Targeting drugs to the site of action
- The use of cell culture systems in the design of novel drug delivery systems
- Vaccine and protein delivery by the parenteral, mucosal and dermal route
- Translation of a concept to a product.

This course will provide an in-depth overview of the newest strategies and achievements in the drug delivery and targeting field. Particular emphasis will be given to the delivery of macromolecules, including vaccines, proteins and genetic material. In addition, the use of cell culture systems in the development of drug delivery systems will be thoroughly discussed. The participants will work in groups on assignments in which they will address various issues relevant to the development of therapeutic strategies employing drug delivery and drug targeting technologies. Online computer facilities are available throughout the course for the assignments and for preparing the oral presentations that accompany the assignments.

The course is KNMP accredited for 3 ECTS credit points, and by EUFEPS and the GALENOS Network.

Prof. G. (Ingrid) Molema

Ms. M.H. (Maaïke) Bansema  
Tel. +31 (0)50 363 8409  
E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

STUDY LOAD

COORDINATOR

INFORMATION/  
ENROLMENT

CONTENT

### Bioinformatics

The course will acquaint those working with molecular biological techniques with relevant information technology, ways to extract relevant information from DNA and protein sequences, and use of the Internet as a means of consulting molecular biological databases.

The following topics will be dealt with:

- Molecular biological software for sequence alignments, homology research, restriction enzyme analysis, pattern/signal recognition in DNA and protein sequences
- Design of PCR primers and probes
- Molecular biological databases, genome projects, and search engines

STUDY LOAD

1 ECTS credit point

COORDINATOR

P. (Peter) Terpstra, PhD  
Dept. of Epidemiology, Genetic Epidemiology & Bioinformatics Unit, UMCG

INFORMATION/  
ENROLMENT

P. (Peter) Terpstra, PhD  
Tel. +31 (0)50 361 2300  
E-mail: [p.terpstra@med.umcg.nl](mailto:p.terpstra@med.umcg.nl)

## Blood-Material Interactions

CONTENT

Manufacturers of medical devices want their devices to be safe and biocompatible. It has been recognized that blood compatibility of materials is of pivotal importance for the compliance of blood-contacting devices. Blood in itself can be considered a very complex and intriguing organ with extensive interaction with all parts of the human body. The components of blood and some of the regulatory pathways will be presented. The implications for the scope of testing will also be discussed. Five testing categories have been outlined in the recently harmonized and published standard EN ISO 10993 – Part 4: “Selection of tests for interactions with blood”. Aspects include materials characterization of medical devices and materials and biomaterials; in-vitro tests for blood compatibility; sample analyses from in-vivo studies; and batch release testing for finished products. Moreover, test conditions must consider the clinical use of the device, which implies testing in circulating blood. Finally, testing methods for studying blood-material interactions will be presented (ELISA, RIA; EIA, colorimetric methods; enzymatic assays; clotting assays; platelet functionality; antibody-binding studies; and fluorometric and luminometric methods).

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering, W.J. Kolff Institute

INFORMATION/  
ENROLMENT

T.G. (Theo) van Kooten, PhD  
Tel. +31 (0)50 363 3122/3140  
E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

## Cells, Materials & Biomaterials

CONTENT

Biomaterials are an integral part of the life of many PhD students within the W.J. Kolff Institute (WJKI). Even the most fundamental research is likely not to be performed without using an actual material. Demands are made to implant materials in relation to their interactions with surrounding tissues, cells and blood (cells). In this short course, participants will be introduced to the biology of the cell in terms of headlines. Then,

- Molecular biological information on the Internet.

STUDY LOAD

examples will be used to elucidate a number of important aspects of cell-material interactions, including the influence of material surface properties. Techniques for analyzing these interactions will also be addressed.

0.25 ECTS credit point

COORDINATOR

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering, W.J. Kolff Institute

INFORMATION/  
ENROLMENT

T.G. (Theo) van Kooten, PhD  
Tel. +31 (0)50 363 3122/3140  
E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

## Colloid Stability

CONTENT

Living systems as well as many abiotic materials that are used in medical and pharmaceutical applications are heterogeneous. It implies that they are structured at sub-micron level, the so-called colloidal domain. In this short course, the various types of interaction that determine colloidal stability are discussed. Insight into these interactions allows manipulation of colloidal stability and, consequently, structural properties.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

Prof. H.C. (Henny) van der Mei  
Department of Biomedical Engineering, W.J. Kolff Institute

INFORMATION/  
ENROLMENT

Prof. H.C. (Henny) van der Mei  
Tel. +31 (0)50 363 3124/3140  
E-mail: [h.c.van.der.mei@med.umcg.nl](mailto:h.c.van.der.mei@med.umcg.nl)

## Polymers in Medicine

CONTENT

A fundamental overview of polymer properties: shape, structure (surface as well as bulk), degradability and other characteristics that can have an influence on the use of polymers in clinical applications, and of their synthesis and the methods to modify their surface structure in order to make them more suitable for clinical applications. Furthermore, there will be a lab tour and demonstrations of several techniques.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

T.R. (Tjar) Koiter, PhD  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

T.R. (Tjar) Koiter, PhD  
Tel. +31 (0) 50 363 3141/3140  
E-mail: [t.r.koiter@med.umcg.nl](mailto:t.r.koiter@med.umcg.nl)

## Basics in Psychology and Psychosocial Factors

*(Research Master CPE)*

## CONTENT

The course gives an overview of major issues and theories of psychology: methods of psychology (research, diagnostics), processes of learning, physiological and cognitive explanations of behavior, stress, emotions, culture, social cognition and social influence, social status, social networks and support, cognitive and social development, coping theory, theories on personality, abnormal behavior and treatment of psychological disorders. Furthermore, psychosocial issues related to health and disease will be dealt with such as impact of disease on psychological and social functioning and psychosocial predictors of course and outcome of disease. Students have to make short assignments when working through the book and use the interactive CD-ROM 'The Mind' which is added to the book.

## STUDY LOAD

8 ECTS credit points

## COORDINATOR

Prof. A.V. (Adelita) Ranchor

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 3632868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Health Psychology: Theory, Research and Practice

*(Research Master CPE)*

## CONTENT

The course presents an overview of the state of the art in Health Psychology. Three main themes are central to the course:

1. health behavior
2. adjustment to chronic illness
3. the health care context.

An additional theme is application of knowledge about these central themes on the development of psychological interventions.

Topics will include: health-related behavior, social-cognitive theories of behavior and health behavior, psychological stress, coping, social support, personality, gender differences in adaptation, coping with chronic illness, quality of life and communication within medical encounters. In addition, psychosocial interventions to increase quality of life of patients are covered.

Throughout the course, the students will work on a presentation for which they have to design a patient-focused intervention and to plan a study aimed at evaluating the intervention, under the supervision of a tutor.

## STUDY LOAD

4 ECTS credit points

## COORDINATOR

Prof. A.V. (Adelita) Ranchor

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Health Psychology; advanced course

*(Research Master CPE)*

## CONTENT

Building on the course "Health Psychology," this course focuses on four important themes in the field of health psychology, namely the etiology of illness and survival, changing health behavior, adaptation to illness, and psychological interventions for patients with a somatic disease. The aim is to provide knowledge and insight in the most recent developments in psychological and medical-sociological theories relevant for theory-driven research in medical settings, as well as for evaluating the effects of psychosocial interventions among patients with a somatic disease.

After an introduction of each theme by the lecturer, the students will read the appropriate papers and work on an individual assignment. Feedback will be provided by fellow students and the lecturer during the next class meeting. For the final assignment the students choose one of the four topics. They have to search for additional literature and write an essay. One of the lecturers will supervise and be available for providing feedback.

## STUDY LOAD

5 ECTS credit points

## COORDINATOR

Prof. M. (Mariët) Hagedoorn

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 363 2868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## Human Neuroanatomy

## CONTENT

*After successful participation in this course:*

- the student has a good regional and functional knowledge of the majority of brain structures, and the entire human central nervous system
- the student is able to communicate about neuroanatomy with health-care and research professionals.

*Theme of the course:* the human central nervous system.

Topics covered include: vertebral column, skull, spinal cord, meningeal and vascular systems, brainstem, cerebellum, limbic system, thalamus, hypothalamus, basal ganglia, cerebral cortex, sensory systems, motor systems, higher order processing.

## STUDY LOAD

3 ECTS credit points, 5 if you also give a seminar talk.

COORDINATOR

R. (Ruud) Kortekaas, PhD  
Dept. of Neurosciences, Faculty of Medical Sciences

INFORMATION/  
ENROLMENT

Mrs. D.H. (Diana) Koopmans  
Antonius Deusinglaan 2, Groningen  
Tel. +31 (0)50 363 7817  
E-mail: [d.h.koopmans@med.umcg.nl](mailto:d.h.koopmans@med.umcg.nl)

## Hydrophobicity-SFE-DLVO

CONTENT

Surface energy, adhesion thermodynamics and DLVO. This lecture will provide basic understanding of quantification of surface hydrophobicity in terms of surface free energy and surface charge in terms of zeta-potentials. Furthermore, prediction of adhesion between two surfaces will be explained using both the thermodynamics and the DLVO theory.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

P.K. (Prashant) Sharma, PhD  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

P.K. (Prashant) Sharma, PhD  
Tel. +31 (0) 50 363 3160  
E-mail: [p.k.sharma@med.umcg.nl](mailto:p.k.sharma@med.umcg.nl)

## Immunology I

CONTENT

This is an existing Immunology course for third and fourth-year biology and medical students, lab technicians, post-doctorate researchers, and others interested in the subject. The course presents a rather detailed insight into the organs and elementary cellular and molecular processes of the immune system. The textbook used is Abbas, Lichtman & Pillai's *Cellular and Molecular Immunology* (Philadelphia 2007: Saunders Elsevier, 6<sup>th</sup> ed.).

STUDY LOAD

4 ECTS credit points

COORDINATOR

B.J. (Bart-Jan) Kroesen, PhD

INFORMATION/  
ENROLMENT

Ms. A. (Annette) Bouman  
Medical Biology  
Tel. +31 (0)50 361 8043  
E-mail: [a.bouman@med.umcg.nl](mailto:a.bouman@med.umcg.nl)

CONTENT

## Implants for Application in Maxillofacial Surgery

Maxillofacial surgery has been performed in the Department of Oral and Maxillofacial Surgery for many years. The use of biomaterials is an intrinsic part of the research program MON-1: Implants for application in maxillofacial surgery. Research is focused on biodegradable osteosyntheses and dental implants. Osteosyntheses should consist of biodegradable, biocompatible polymers with a high tensile strength, elasticity modulus and impact resilience. Instrumentation for handling the polymers and methods for sterilization and packaging are also being developed. Dental implants are being developed to restore the dentition of edentulous patients. Often it is necessary to reconstruct the resorbed mandible and maxilla by increasing the amount of bone before implants can be inserted. Besides the practical problems that are encountered, a number of considerations are taken into account: clinical and psychological implications, cost effectiveness, forces associated with chewing, and even radiation effects from oncology treatment in the head-neck area.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

T.G. (Theo) van Kooten, PhD  
Tel. +31 (0)50 363 3122/3140  
E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

CONTENT

## Implants for Application in Ophthalmology

Ophthalmic biomaterials are among the most widely used in-vivo materials in the world. More than 85 million people worldwide wear contact lenses. In the United States alone, another 5 million intraocular lenses (IOLs) made of silicones, acrylates, methacrylates, or combinations thereof, are implanted during cataract surgery every year. These operations additionally involve viscoelastic agents such as hyaluronic acid and hydroxymethyl cellulose. Many other devices are being used or investigated for potential use in the eye. The success rate of especially IOLs and contact lenses is high, yet further advancement is required. In this course, an overview of ophthalmic material applications will be given together with an outlook on the (near) future of this research field. A demonstration about current research will also be given.

STUDY LOAD

0.25 ECTS credit point

COORDINATOR

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

T.G. (Theo) van Kooten, PhD  
Department of Biomedical Engineering  
Tel. +31 (0)50 363 3122/3140  
E-mail: [t.g.van.kooten@med.umcg.nl](mailto:t.g.van.kooten@med.umcg.nl)

## Introduction to Clinical and Fundamental Oncology

### CONTENT

Several lecturers, experts in oncology, will introduce different subjects of oncological research and treatment. The course will give a broad overview of the most important aspects of basic and clinical-oncological research, treatment and psychosocial and ethical aspects.

### STUDY LOAD

1 ECTS credit point

### COORDINATOR

Netherlands Association of Oncology

### INFORMATION/ ENROLMENT

Secretariat of the Netherlands Association of Oncology (NvVO)

Tel. +31 (0)30 2767522

E-mail: [Secretariaat@nvvoncologie.nl](mailto:Secretariaat@nvvoncologie.nl)

## Introduction to Medical Product Design

### CONTENT

Medical products are becoming more and more important for the treatment of patients. Medical products are used for diagnosis (MRI, X-ray, sonography, thermometers), surgery (surgical instruments, anesthesia), support of organs function (orthoses, glasses, hearing aids, pacemakers) and replacement of organs (hip and knee endoprotheses, artificial hearts). Many medical products have been developed by clinicians. Nowadays, most products are much more complex and thus require a multi-disciplinary research team to develop them. A methodological approach of the design process ensures that all relevant aspects are covered and that the design process can be controlled in terms of working hours, money and transit time. This ensures that: a good overview of all activities is realized; the chance of missing important aspects is decreased; it is easier to make good decisions; and the chance of realizing the best design is improved. An extra advantage is that it is possible to teach and study such a design methodology. In this course, an overview of all steps of the design methodology will be given as well as examples of applications. Assignments will be given to practice the theory. The course is a single afternoon session with lectures and practical work

### STUDY LOAD

0.25 ECTS credit point

### COORDINATOR

T.R. (Tjar) Koiter, PhD  
Department of Biomedical Engineering

### INFORMATION/ ENROLMENT

T.R. (Tjar) Koiter, PhD  
Tel. +31 (0)50 363 3141/3140  
E-mail: [t.r.koiter@med.umcg.nl](mailto:t.r.koiter@med.umcg.nl)

### CONTENT

## Membranes, Signal Transduction and Transport

Recent concepts of mechanisms of membrane transport – both trans-membrane transport and membrane-vesicle-mediated transport – will be discussed, as well as signal transduction pathways originating at membranes. The course focuses on the level of cell biology in physiological and/or pathophysiological conditions but also includes transport and signaling studies at the level of the organism. Topics will include:

- the structure, biogenesis, and dynamics of biological membranes
- mechanisms of membrane transport
- mechanisms of signaling pathways by way of membranes
- analytical and image processing techniques.

### STUDY LOAD

3 ECTS credit points

### COORDINATOR

J.W. (Jan-Willem) Kok, PhD

### INFORMATION/ ENROLMENT

Ms. M.H. (Maaïke) Bansema

Tel. +31 (0)50 363 8409

E-mail: [m.h.bansema@med.umcg.nl](mailto:m.h.bansema@med.umcg.nl)

### CONTENT

## Philosophy of Neuroscience

The last two decades have seen an explosion of research within and related to the neurosciences. Much of this research has philosophical implications that have hardly been articulated so far. In this course, we will introduce and discuss a number of philosophical topics that are influenced by, and influence, current neuroscience research (in a broad sense). These topics range from new developments on “standard” philosophical issues to “new” issues that derive from current work in the neurosciences.

### The following topics will be discussed:

Introduction: Philosophy of neuroscience and neurophilosophy  
Emergence and reduction: What is the difference between mind and brain?  
Brains and minds: Measuring the brain, and a Wittgensteinian critique  
Vision: How the neurosciences change what it means to see evolution and modularity. How did evolution affect the mind?  
Epistemic issues: Problems with brain measurements  
Mirror neurons: Innateness to Tomasello’s culture first. The difference between you and me is no longer what it used to be.  
Language: From Chomskian  
Self-awareness: Metzinger claims that we do not truly have a self.

Some familiarity with basic neuroscience concepts and terminology is assumed. If necessary, chapter 7 of Paul Churchland’s *Matter and Consciousness* (Cambridge MA, 1984: MIT Press) provides a basic introduction into neuroscience, but any of the numerous introductions in (cognitive) neuroscience will do as well. John Allman’s *Evolving Brains* (New York, 1999: Scientific American Library) is particularly

recommended for giving an account of the neural details placed in their evolutionary and behavioral background. At the end of each meeting, one of the lecturers presents a synopsis of the literature that is to be discussed at the next meeting. In addition, an essay assignment concerning this literature is given.

## STUDY LOAD

Between 1 and 5 ECTS credit points

## COORDINATOR

F.A. (Fred) Keijzer, PhD  
Faculty of Philosophy, Oude Boteringestraat 52

INFORMATION/  
ENROLMENT

F.A. (Fred) Keijzer, PhD  
Tel. +31 (0)50 363 6162  
E-mail: [f.a.keijzer@rug.nl](mailto:f.a.keijzer@rug.nl)

## Tissue Engineering – An Introduction

## CONTENT

Tissue engineering is a relative new field of research aiming at repair of damaged tissues or organs. To achieve this purpose cells are cultured in a laboratory, then combined with a biomaterial with or without growth factors to produce a specific tissue. Matters such as the choice of cells – either tissue specific cells (differentiated cells) or stem cells (undifferentiated cells) – the consequences of the interactions of cells with biomaterials, the structure of the biomaterial and the cell survival after implantation, will be addressed. On the basis of scientific articles specific issues will be discussed in small groups to be presented in a final plenary session.

## STUDY LOAD

0.25 ECTS credit point

## COORDINATOR

R. (Roel) Kuijjer  
Department of Biomedical Engineering

INFORMATION/  
ENROLMENT

R. (Roel) Kuijjer, PhD  
Tel. +31 (0)50 363 3122/3140  
E-mail: [r.kuijjer@med.umcg.nl](mailto:r.kuijjer@med.umcg.nl)

## Basics in Medicine

*(Research Master CPE)*

## CONTENT

The course covers the major areas of clinical practice, and focuses on the major disease groups. Topics include internal medicine, genetics, immunology, infectious diseases, neurology and psychiatry. Medical doctors and clinical specialists will present interactive lectures and case studies. Students will learn about symptoms and physical signs of major diseases. They will be introduced to the clinical practice of generating differential diagnoses.

## STUDY LOAD

8 ECTS credit points

## COORDINATOR

M. (Marjan) Kerkhof, PhD

INFORMATION/  
ENROLMENT

Ms. R.C. (Renate) Kroese  
Tel. +31 (0)50 3632868  
E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)



# GSMS Courses

## Seminars / Symposia / Meetings

### CONTENT

#### BCN PhD Retreat

All PhD students will be invited to the retreat. Students who are in the second and fourth years of their project are invited to give a 10-minute presentation on their project, followed by a 10-minute discussion. Everyone is expected to be actively involved in the discussions following the presentations. Several senior staff members will be present to join in the discussions. Two senior staff members will provide feedback to the speakers.

After this course you should have improved your abilities to:

- make a distinction between what to keep and what to leave out
- organize a presentation in such a way that it is easy to follow
- create presentations that will hold your audience's attention
- explain your research to fellow PhD students and senior scientists, both inside and outside your field
- answer questions about your research in a clear and concise way
- ask questions about other researchers' presentations.

### STUDY LOAD

1 ECTS credit point for participation

1.5 ECTS credit points for chairing a session

2 ECTS credit points for participation with a presentation

### COORDINATOR

Prof. H.W.G.M. (Erik) Boddeke

### INFORMATION/ ENROLMENT

Ms. J. (Janine) Wieringa

Tel. +31 (0)50 363 7817

E-mail: [janine.wieringa@med.umcg.nl](mailto:janine.wieringa@med.umcg.nl)

### CONTENT

#### SHARE Seminar Series

The content of a seminar depends on the lecturer. International scientists visiting Groningen are asked to give a seminar on their subject.

### STUDY LOAD

14 seminars: 1 ECTS credit point

### COORDINATOR

Ms. U. (Ute) Bültmann, PhD

### INFORMATION

Ms. R.C. (Renate) Kroese

Tel. +31 (0)50 363 2868

E-mail: [r.c.kroese@med.umcg.nl](mailto:r.c.kroese@med.umcg.nl)

## BCN Lectures

**CONTENT** Each year, some nine leading researchers from the Netherlands or abroad will be invited to give a lecture. The guest speakers will be invited for several days, during which PhD students will have the opportunity for informal interaction.

**STUDY LOAD** 0.25 ECTS credit point

**COORDINATOR** Prof. H.W.G.M. (Erik) Boddeke

**INFORMATION/ ENROLMENT** Announcements for the lectures will be sent by e-mail.

## BCN Symposium

**CONTENT** BCN organizes a themed symposium once a year. The symposium is a one-day activity with lectures for a broad audience during the morning and three workshops in parallel sessions during the afternoon.

**STUDY LOAD** 0.5 ECTS credit point

**COORDINATOR** Prof. H.W.G.M. (Erik) Boddeke

**INFORMATION/ ENROLMENT** Ms. J. (Janine) Wieringa  
Tel. +31 (0)50 363 7817  
E-mail: [janine.wieringa@med.umcg.nl](mailto:janine.wieringa@med.umcg.nl)

## BCN Master Classes

**CONTENT** Whereas most of the other courses organized by BCN cover large parts of the research field of the behavioral and cognitive neurosciences, each master class deals with a narrow theme, the theme of the invited master academic, an internationally outstanding researcher. Only those BCN PhD students whose research interest is closely related to that of the guest lecturer are invited to participate in the class. Participants will receive study material – one or more of the lecturer's articles – to prepare for the master class. Furthermore, they will be asked to formulate a question or statement they wish to discuss with the scientist involved before attending the class.

Every PhD student is invited to make suggestions for internationally famous scientists that they would like to see invited to Groningen to deliver a master class. Often, the master class is combined with a public lecture. Scientists who are already planning to come to Groningen (or the Netherlands) for some other reason may also be requested to give a master class. Please mail your suggestions or requests to: [d.h.koopmans@med.umcg.nl](mailto:d.h.koopmans@med.umcg.nl).

**STUDY LOAD** 0.5 ECTS credit point

**COORDINATOR** Prof. H.W.G.M. (Erik) Boddeke

**INFORMATION/ ENROLMENT** Ms. D. (Diana) Koopmans  
Tel. +31 (0)50 363 7817  
E-mail: [d.h.koopmans@med.umcg.nl](mailto:d.h.koopmans@med.umcg.nl)

## Dutch Endo-Neuro-Psycho Meeting

**CONTENT** In 1997 the NVE (Nederlandse Vereniging voor Endocrinologie) and the Dutch Neurofederation (Neurofederatie) began organizing an annual Dutch Endo-Neuro Meeting, supported by the Netherlands Organisation for Health Research and Development (ZonMw). The purpose of this meeting is to offer a national forum for scientific exchange between the research fields of endocrinology, neuroendocrinology, basic and clinical neuroscience and psychiatry. The scientific program consists of a series of sessions on new scientific developments, including many introductory lectures by internationally acknowledged Dutch and foreign scientists. The meeting not only aims to provide an opportunity for junior scientists to discuss results with senior scientists in an informal atmosphere, but also provides the opportunity to become informed about recent developments. The scientific program is largely based on proposals received by the organizing committee. All scientists have the opportunity to contribute to the scientific program by organizing a session at this national neuroscience forum.

BCN graduate students are encouraged to present posters on their research and to submit an abstract of their work via the website. Up-to-date information about previous meetings can be found on the website.

**STUDY LOAD** 0.5 ECTS credit point

**COORDINATOR** NVE

**INFORMATION** [www.enpmeeting.org](http://www.enpmeeting.org)

## LOT Summer and Winter School

**CONTENT** LOT is an acronym of *Landelijke Onderzoekschool Taalwetenschap* (National Graduate School of Linguistics). Research in LOT thus focuses on the following issue: "What are the cognitive faculties underlying human language in structure and use, and what principles govern their interaction?" It is the goal of LOT to create a scientific community in which this research can be optimally pursued.

LOT organizes, and is principally responsible for, the national graduate courses. LOT offers a Winter School in January and a Summer School in June/July. The topics of the

STUDY LOAD 0.5 ECTS credit point

COORDINATOR LOT

INFORMATION/  
ENROLMENT Information about the Winter en Summer Schools can be found on the LOT website: [www.lotschool.nl](http://www.lotschool.nl)

## Molecular Medicine Seminar Series

CONTENT The Departments of Cardiology, Cell Biology, Hematology, Pathology, Epidemiology, Medical Biology, Medical Oncology, Genetics, and Neuroscience, and the Institute for Healthy Ageing, together with the Wenckebach Instituut of the UMCG, organize a series of lectures on topics related to Molecular Medicine in its broadest sense. Prior to each lecture a workshop is scheduled in which a selected group of 4 or 5 PhD students/postdocs will discuss their work with the speaker of the day.

STUDY LOAD 1 ECTS credit point (with a maximum of 4 ECTS credit points a year)

COORDINATOR Prof. M.H. (Marten) Hofker

ENROLMENT Ms. J.H. (Ingrid) van der Strate-Tempert  
[j.h.van.der.strate-tempert@med.umcg.nl](mailto:j.h.van.der.strate-tempert@med.umcg.nl)

## NWO Talent Day (Talentendag)

CONTENT A one-day event in which students can attend lectures and workshops on various topics.

The following workshops will be held in Dutch:

- *Subsidies aanvragen* (Applying for grants)
- *Creatief denken wetenschappelijk verantwoord!* (Scientifically sound creative thinking)
- *Mediatraining* (Media training)
- *Onderhandelen* (Negotiating)
- *Leidinggeven voor beginners* (Management for beginners)
- *Netwerken doe je zo* (How to network)

The workshops in English are:

- Write it Right
- Developing your Brand
- Career Development in Academia
- Social Media and your Career

STUDY LOAD 0.25 ECTS credit point

COORDINATOR NWO

INFORMATION/  
ENROLMENT *Information and application*  
Netherlands Organisation for Scientific Research (NWO)

WEBSITE [www.nwo.nl/nwohome.nsf/pages/NWOP\\_5ZYG4?Opendocument](http://www.nwo.nl/nwohome.nsf/pages/NWOP_5ZYG4?Opendocument)

LOCATION Zeist

As a follow-up and for more detailed study of the Talent Day topics, NWO also organizes Talent Classes, a series of workshops focusing on one of the topics. Please consult the NWO homepage for more information and the dates. Please register as soon as possible, as these days are very popular and the number of participants is limited.



# GSMS Courses

# External Courses

Admission

General

Research specific

Field specific

Meetings

External

## Basiscursus Regelgeving & Organisatie voor Klinisch Onderzoekers (BROK)

The GSMS will reimburse the costs to *registered PhD-students*.

LOCATION

UMCG/Education Center

Detailed information:

[www.wenckebachinstituut.nl](http://www.wenckebachinstituut.nl)

## Central Medical Library Courses

Medical Library courses can be taken at the UMCG Central Medical Library. Participants must be connected with or employed by the UMCG, or studying at the UMCG. Courses in Searching for literature are strongly recommended. It is also possible to make an individual appointment for a literature search.

LOCATION

UMCG/CMB

Detailed information:

<http://www.rug.nl/bibliotheek/locaties/bibcmb/cursussen/index>

## Courses on Information Technology

Courses on information technology can be taken at the University of Groningen's Donald Smits Center for Information Technology .

LOCATION

RuG/Zernikeborg

Detailed information:

[www.rug.nl/cit/index](http://www.rug.nl/cit/index)

## Courses on Career Development & Training

The Center for Career Development & Training offers training courses in the fields of grant applications, leadership, general skills and career development.

LOCATION

RuG/Broerstraat 5, building 13

Detailed information:

[www.rug.nl/medewerkers/voorzieningen/Dienstenmobiliteitenopleiding/cursussenMenO/loopbaanOntwikkeling/loopbaanOriëntatiePromovendi](http://www.rug.nl/medewerkers/voorzieningen/Dienstenmobiliteitenopleiding/cursussenMenO/loopbaanOntwikkeling/loopbaanOriëntatiePromovendi)

# Addendum



## Degree program advisory committees

Because there is a constant turnover of PhD student members, only the names of staff members are given.

### GSMS Degree program advisory committee

The GSMS Degree program advisory committee is the umbrella committee and consists of the chairs of the research institutes' Degree program advisory committees and their PhD student representatives.

Staff: Flora Haaijer-Ruskamp, Natasha Maurits, Theo van Kooten, Ingrid Molema, Robbert Sanderman (chair).

*PhD student representatives: 5.*

#### a. BCN PhD Degree program advisory committee

*Staff: Erik Boddeke, Diana Koopmans, Evelyn Kuiper-Drenth, Natasha Maurits (chair), M. Nieuwenstein, S. Verhulst, Janine Wieringa.*

*PhD student representatives: 7.*

#### b. BCN Master's Degree program advisory committee

*Staff: Ulrich Eisel, teacher N, Yana Heussen, student C (chair), Jaap Koolhaas, program director, Hedderik van Rijn, teacher C, Anton Scheurink, teacher B.*

*Students representatives: 2.*

#### c. GUIDE PhD Degree program advisory committee

*Staff: Leonie Beljaars, Gerard Koppelman, Ingrid Molema (chair), Cisca Wijmenga.*

*PhD student representatives: 3.*

#### d. MPDI (Top) Master's Degree program advisory committee

*Staff: Frank Dekker, Robert Hofstra, Martina Schmidt, Sven van IJzendoorn.*

*Advisors: Han Moshage, Désirée Jansen.*

*Master's student representatives: 4.*

#### e. W.J. Kolff institute PhD Degree program advisory committee

*Staff: Theo van Kooten (chair).*

*PhD student representatives: 2.*

#### f. SHARE PhD Degree program advisory committee

*Staff: Janke Cohen-Schotanus, Pieter Dijkstra, Flora Haaijer-Ruskamp (chair), Désirée Jansen, Jac van der Klink, Adelita Ranchor.*

*PhD-students representatives: 2.*

#### g. CPE Master Degree program advisory committee

*Staff: Ute Bültmann, Huibert Burger, Erik Buskens, Mariët Hagedoorn.*

*Advisors: Ronald Stolk, Désirée Jansen. Master's student representatives: 4.*

#### h. GSMS PhD Council

The PhD Council consists of 8 PhD students, 2 from each research institute.

[phdcouncilgms@gmail.com](mailto:phdcouncilgms@gmail.com)



university of  
 groningen



umcg

