



Royal Netherlands Institute for Sea Research

DUTCH RESEARCH INSTITUTES 'FOKUZ' ON COOPERATION IN FUNDAMENTAL MARINE RESEARCH.

In the Netherlands, two marine research institutes, NIOZ Royal Netherlands Institute for Sea Research and the Centre of Estuarine and Marine Ecology of the Netherlands Institute of Ecology (NIOO-CEME), have decided to join forces in 'FOKUZ' to further strengthen their already prominent international positions in fundamental marine research.

Within the cooperation programme FOKUZ, 'Fundamenteel Onderzoek Kust en Zee' (Fundamental Research on Seas and Coasts), the two institutes will develop a joint research programme on the following topics:

- **The physics, biogeochemistry and ecology of small particles in the North Sea.**
- **Biogeochemical cycles in relation to climate change and eutrophication.**
- **The role of biodiversity in ecosystem functioning.**

For more information consult the websites:
www.fokuz.nl
www.nioz.nl/scienceplan
www.nioo.knaw.nl/science

Acquisition is not appreciated.

The NIOZ Royal Netherlands Institute for Sea Research is an independent research institute associated with the Netherlands Organization for Scientific Research (NWO). NIOZ was founded in 1876 and is one of the oldest major oceanographic institutions in Europe. Its mission is to pursue curiosity-driven multidisciplinary marine research in coastal and shelf seas as well as in the open ocean through close co-operation between physicists, chemists, geologists and biologists.

Marine research is carried out by five scientific departments: Physical Oceanography, Marine Geology, Marine Biogeochemistry, Biological Oceanography and Marine Ecology. To enforce and further develop marine research at the institute, Royal NIOZ offers a tenure track position for a

MARINE SCIENTIST (M/F)

We are looking for a highly motivated and qualified person with a PhD degree and post-doc experience as a marine scientist in any of the basic disciplines (physics, chemistry, geology and biology). The candidate should have knowledge of sea-going techniques. He/she should have a keen interest to develop multidisciplinary research projects, and be able to supervise PhD and undergraduate students as well as technicians. The applicant is expected to initiate new projects by acquiring external funding.

We offer a tenure-track position for 5 years. Depending on his/her background the applicant will become a member of one of the scientific departments. At the end of a successful tenure track term a permanent scientific staff position will be offered up to the level of senior scientist. Criteria for evaluation comprise a track record of publications that is well above average, the proven ability to acquire external funding, and building of an international network and reputation. We offer a pension scheme, a health insurance allowance, a yearly 8% vacation allowance, year-end bonus and flexible employment conditions. Conditions are based on the Collective Employment Agreement of the NWO Research Institutes.

For our Scientific Departments we are looking for several

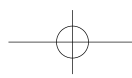
PHD STUDENTS (M/F)

We offer a PhD position for 4 years. We offer a pension scheme, a health insurance allowance, a yearly 8% vacation allowance, year-end bonus and flexible employment conditions. Conditions are based on the Collective Employment Agreement of the Research Institutes. More detailed information about the open positions is available on the NIOZ website: www.nioz.nl/jobs

Applicants should send an application letter, CV with reference list, and a short description of (future) research interests to the Personnel Department, attended to Mrs. Jolanda Evers, Royal Netherlands Institute for Sea Research (NIOZ), P.O. Box 59, 1790 AB Den Burg, Texel, The Netherlands, phone: 0031 (0)222 36 93 71 or e-mail to: jobs@nioz.nl. Closing date for both positions: 1 December 2008.

More information about our institute can be found at www.nioz.nl.



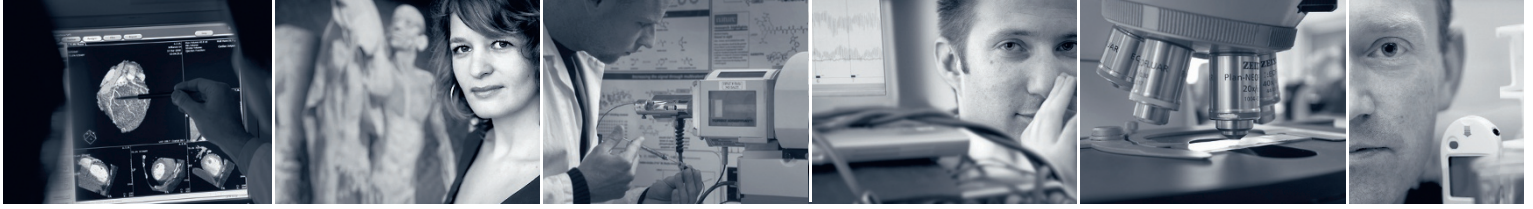


Advertisement Feature



Maastricht University

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Maastricht University Medical Center+

A healthy approach to illness

At Maastricht University Medical Center+ (Maastricht UMC+), we take a broad view. Our research includes health and well-being as well as illness, and explores social trends alongside scientific facts. We look at the entire continuum of care, from prevention, diagnosis and treatment, to recovery and social reintegration. And our research takes place at every level – from fundamental research to clinical applications, and from gene structure to human dynamics.

An integrated approach

Established in 2008, Maastricht UMC+ is the result of a merger between the university's distinguished Faculty of Health, Medicine and Life Sciences and the university hospital Maastricht. We combine specialised medical training with a strong health sciences component – a distinctive approach signified by the + at the end of our name.

Talent and diversity

Maastricht UMC+ is not only the largest and most wide-ranging health sciences faculty in Europe, it is also one of the leading research centres in the world. Research is conducted in a number of graduate schools, which we aim to make true 'centres of excellence'. To achieve this, we are willing to invest heavily in talent, drawing out the very best results from the very best team of academics, medical staff and students.

Key research areas

Within Maastricht UMC+, we have selected five key areas of research:

- Cardiovascular diseases
- Oncology
- Chronic diseases
- Mental health care and neurosciences
- Public health and primary care

This close specialisation enables us to focus our resources, maximising the quality of our treatment and research. By combining the best of our clinical and academic knowledge, we aim to achieve the highest standards of patient care.

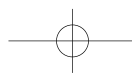
International orientation

We believe that medicine and health issues should have no frontiers. That is why Maastricht UMC+ is keen to draw together people who lead their fields, no matter where in the world they may be from. This means our teams have a strong international basis. As part of our ambitious and innovative approach to medical treatment, we have recently entered into collaboration with nearby medical centres in Liège (Belgium) and Aachen (Germany).

With an annual budget of € 345 million, Maastricht UMC+ has 715 hospital beds and employs over 6,000 staff. During 2007, Maastricht UMC+ treated 25,768 patients, while 394,632 people visited the outpatient clinics.

Maastricht UMC+ has an active population of some 4,000 students, and in 2008 the medical school was once again ranked as being the best within the Netherlands. In 2007, we published 1,641 scientific papers and awarded 125 PhDs.

Based in Europe, focused on the world. Maastricht University is a stimulating environment. Where research and teaching are complementary. Where innovation is our focus. Where talent can flourish. A truly student oriented research university.





Join our ambitions!

For the talented researcher with a critical mind, Maastricht University provides the perfect dynamic work environment. We offer you freedom in your work, so that you can solve tomorrow's problems today. Research carried out at Maastricht has led to several high-profile discoveries, affecting the day-to-day lives of people around the world.

Maastricht University is a well-established European university with a strong international outlook. Undergraduates are taught through a renowned system of Problem-Based Learning, providing them with a broad, high-quality, but independent learning experience. For graduates, Maastricht University hosts several ambitious research programmes that focus on current themes. These include areas as varied as the improvement of cardiovascular diagnostics, the relationship between nutrition and cancer, miscarriages of justice and forensics, and the development of tools and techniques for sustainable entrepreneurship and investment.

Our researchers are challenged to adopt unconventional and multidisciplinary approaches, focusing on a portfolio of carefully selected research themes that have proven their importance. We are an ambitious university, and we invest heavily in both research and talent. For this reason, we are seeking to fill a number of vacancies at the Maastricht University Medical Center⁺.

As part of our talent-driven HRM policy, we ensure that excellent performance is always well-rewarded. The university offers an academic climate and a range of employment benefits that are well-suited to international staff and attuned to our ambitions.

Are you interested in working at Maastricht University? Read more about the university, our research portfolio, and current vacancies at www.unimaas.nl/researchpositions.

Maastricht University facts and figures – 2007/2008

Staff: 3,423

Academic staff: 1,801

International academic staff: 18%

Students: 13,500

Intake international students: Undergraduates – 50%

Postgraduates – 64%

Maastricht students on foreign exchange: 11% out; 7% in

English-taught programmes: Undergraduate 16 out of 19 programmes

Postgraduate all programmes

Annual budget: € 350 million.

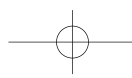


Spacious yet easily affordable homes, a beautiful landscape, a superb cultural and culinary environment, social stability, high-ranking schools, excellent accessibility, and an exceptional quality of life... Welcome to Maastricht, one of the oldest and most beautiful cities in the Netherlands.

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For detailed information visit:

www.unimaas.nl/researchpositions



Advertisement Feature



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Working at Maastricht UMC+

Maastricht University Medical Center+ seeks the very best academics for its high-profile research and staff positions. We have an open attitude towards candidates – if your profile does not match our current vacancies, but you believe you do fit with the Maastricht UMC+ philosophy, we would still be pleased to hear from you.

Information can be obtained from any of the School Directors (see below) or alternatively, from the Dean, Professor Martin Paul (m.paul@facburfdg.unimaas.nl). For detailed information about either the Schools or current job opportunities, see www.unimaas.nl/researchpositions.

Research and teaching

Research and teaching at Maastricht UMC+ take place within graduate schools. The graduate schools use Maastricht UMC+'s unique Chains of Care concept. This combines advanced academic theory with a practical, hands-on approach to offer the very best levels of specialised patient care.

Inter-school collaboration is encouraged through joint research programmes, allowing the sharing of expertise, resources and patients. As an example, Maastricht UMC+ is involved in research into diabetes – a programme shared between the three Schools of Cardiovascular Diseases, Nutrition, Toxicology & Metabolism, and Public Health & Primary Care.

Research carried out by Maastricht UMC+ has proven highly influential. According to the ISI, our research papers currently have an average citation score that is 45% above the global average. Our key research areas typically have even higher scores.

School of Public Health & Primary Care, CAPHRI

Director: Prof. Guy Widdershoven

Guy.Widdershoven@CAPHRI.unimaas.nl www.caphri.nl

The School of Public Health & Primary Care aims to improve general health and well-being. Our research focuses on healthcare innovations ranging from prevention to rehabilitation, and examines all strategies from patient, professional and societal perspectives.

Main areas of research:

- Primary Care – Clinical research into the diagnosis, prognosis and treatment of diseases
- Innovation of Care – Development and application of care interventions and strategies
- Public Health – Development and application of solutions for societal health problems

School of Cardiovascular Diseases, CARIM

Director: Prof. Mat Daemen

Mat.Daemen@PATH.unimaas.nl www.carim.unimaas.nl

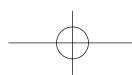
The School of Cardiovascular Diseases focuses on basic disease mechanisms as well as early diagnosis of, and individual risk stratification for, cardiovascular disease. We aim to make new research concepts available more quickly for use in clinical practice.

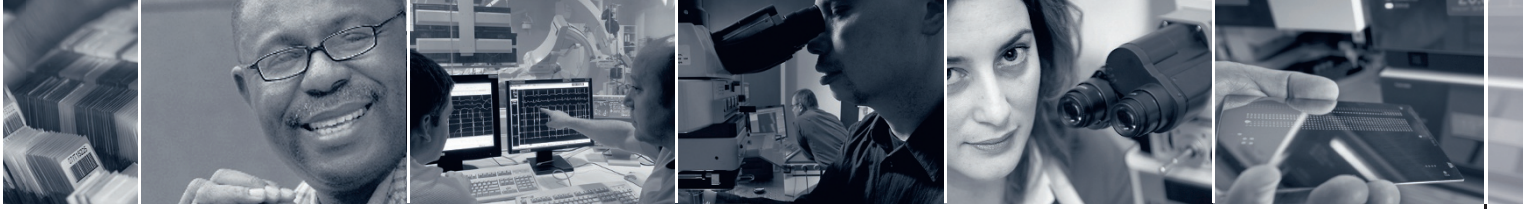
Main areas of research:

- Thrombosis and haemostasis – Humoral, cellular, vascular and clinical aspects
- Cardiac functions and adaptation – Ischemic damage and adaptation, cardiac metabolic disorders, mechanical dysfunction, arrhythmias, genomics
- Vascular biology of both large and small vessels – Vascular development, vascular remodelling, predisposition to vascular disease, mechanisms of vascular occlusion, vascular medicine

Diabetes and imaging are linking themes in these research areas.

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School of Oncology & Developmental Biology, GROW

Director: Prof. Piet van den Brandt

Piet.vandenBrandt@GROW.unimaas.nl www.grow-um.nl

The School of Oncology & Developmental Biology conducts research into the (epi)genetic, cellular and environmental factors that underlie the development of cancer, cell growth and tissue differentiation. We focus on translational research that can contribute to the development of individualised prevention, patient diagnostics and treatment.

Main areas of research:

- Oncology – Angiogenesis and hypoxia, molecular oncology, clinical oncology
- Developmental biology – Fertility, early embryonic development, epigenetics and gene expression, clinical genetics, genital tract and implantation, maternal physiology, perinatal stress

School of Mental Health & Neuroscience, MHeNS

Director: Prof. Harry Steinbusch

H.Steinbusch@NP.unimaas.nl http://mhens.unimaas.nl

The School of Mental Health & Neuroscience specialises in translational research into neurodegenerative and neuropsychiatric disorders. We focus on the development of new therapeutic strategies.

Main areas of research:

- Brain and cognition – Cognitive development and ageing, cognitive disorders, biopsychological mechanisms and learning
- Mental health ecogenetics – Individual/environment interaction, psychiatric disorders, somatic co-morbidity
- Neuroscience – Mechanisms in neurodegeneration and plasticity

School of Nutrition, Toxicology & Metabolism, NUTRIM

Director: Prof. Annemie Schols

Amwj.Schols@NUTRIM.unimaas.nl www.nutrim.unimaas.nl

The School of Nutrition, Toxicology & Metabolism specialises in translational research and also offers education on nutritional health benefits, and the risks associated with metabolic and chronic inflammatory diseases. Our research is implemented in lifestyle interventions and novel clinical nutrition concepts, and plays a major role in biobusiness.

Main areas of research:

- Metabolic syndrome – Energy balance and obesity; risk of diabetes and cardiovascular disease
- Gut-liver homeostasis – Gut-liver metabolism, intestinal integrity and defence
- Chronic inflammatory disease and wasting – Inflammation and oxidant/antioxidant networks, skeletal muscle weakness associated with ageing and disease
- Gene/environment interactions – Disease susceptibility, toxicogenomics

School of Health Sciences Education, SHE

Director: Prof. Cees van der Vleuten

C.vanderVleuten@EDUC.unimaas.nl www.she.unimaas.nl

The School of Health Sciences offers a range of training programmes in medical and health sciences education, as well as a research programme focused on innovations in education.

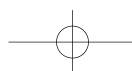
Main areas of research:

- Learning and innovative learning environments
- Assessment and evaluation

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For detailed information visit:

www.unimaas.nl/researchpositions

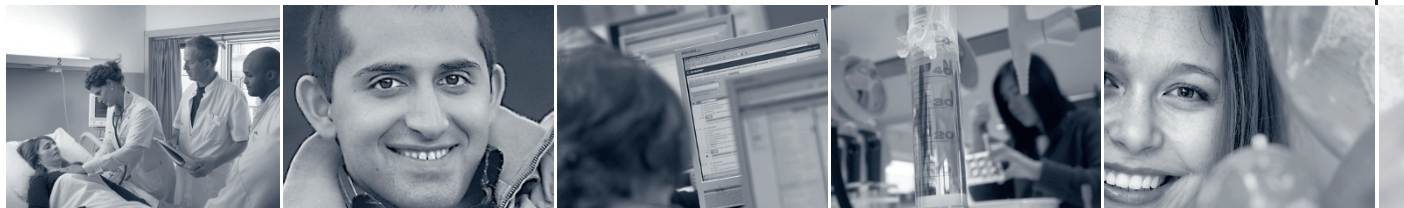


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Are you interested in strategic leadership? Please consider the following positions!

School of Public Health & Primary Care, CAPHRI

• Professor of Population Research in Primary Care (2008.215)

Keywords: population data bases, biomedical data, lifestyle, early detection, early treatment, chronic diseases

• Professor of Health Promotion and Self-Management (2008.216)

Keywords: health promotion, disease management, self-management in relation to medical treatment

• Professor of Innovation of Care (2008.217)

Keywords: health services innovation, chronic care, care for the elderly, disease management, redesign, evaluation

School of Cardiovascular Diseases, CARIM

• Professor of Clinical Hemostasis (2008.218)

Keywords: atherothrombosis, novel biomarkers, platelets, inflammation, atherosclerosis

• Professor of Pharmacology (2008.219)

Keywords: novel tools, molecular pharmacology, inflammation, cardiac/vascular injury

• Professor of Clinical Heart Failure (2008.220)

Keywords: advanced heart failure management, cost effectiveness of innovative technologies, molecular diagnostics

• Professor of Radiochemistry (2008.221)

Keywords: radiotracer imaging, molecular imaging, functional imaging, molecular target, cellular biology, molecular biology, inflammation, atherosclerosis

• Professor of Biomedical Technology (2008.222)

A new department for Biomedical Technology will be established aimed to stimulate research and education of Biomedical Technology in Maastricht UMC. Biomedical Engineering is a joint venture of Eindhoven University of Technology (TU/e) and Maastricht UMC+.

Keywords: physician, develop/translate biomedical models/technology, clinical setting.

School of Oncology & Developmental Biology, GROW

• Associate professor of Molecular Epidemiology (2008.223)

Keywords: gene environment interaction, epigenetics, oncology

School of Mental Health & Neuroscience, MHeNS

• Professor of Basic Neuroscience (2008.224)

Keywords: molecular and cellular neurosciences, quantitative neuro-anatomy, depression, neurodegeneration

School of Nutrition, Toxicology and Metabolism, NUTRIM

• Professor of Complex Genetics (2008.226)

Keywords: gene-environment interaction – nutrition

• (Associate) Professor of Neuroregulation of Inflammation (2008.227)

Keywords: gut liver hemostasis – nutrition

• (Associate) Professor of Respiratory Biology (2008.228)

Keywords: inflammation, wasting COPD

School of Health Sciences Education, SHE

• Professor of Learning and Instruction (2008.225)

Keywords: innovative learning environment, self-directed learners

Do you want to strengthen your career perspectives? Then apply for one of these positions!

School of Public Health & Primary Care, CAPHRI

• 10 postdoctoral fellows (2008.259)

Keywords: Public health, primary care, innovation of care, healthy and successful ageing

School of Cardiovascular Diseases, CARIM

• 5 Postdoctoral fellows (2008.260)

Keywords: Thrombosis and haemostasis, cardiac function and failure, vascular biology, translational molecular medicine, biomedical materials, imaging

School of Oncology & Developmental Biology, GROW

• Postdoctoral fellow (2008.261)

Keywords: Molecular imaging, biochemistry, oncology

• Postdoctoral fellow (2008.262)

Keywords: Angiogenesis, immune system, oncology

School of Mental Health & Neuroscience, MHeNS

• Postdoctoral fellow (2008.263)

Keywords: Molecular mechanisms related Neurodegenerative diseases and epigenetics

• Associate Professor of Neurophysiology (2008.264)

Keywords: Neuromodulation, Parkinson's Disease, pain, neuro-urology

• Assistant Professor of Cellular Neuroscience (2008.265)

Keywords: Neurodegenerative diseases, molecular and quantitative neuromorphology

School of Nutrition, Toxicology and Metabolism, NUTRIM

• Postdoctoral fellow (2008.266)

Keywords: Functional genomics, pathway analysis, metabolic flexibility, adipose tissue

• Postdoctoral fellow (2008.267)

Keywords: Functional metabolomics, oxidative toxicology, exhaled air, GC-MS, bioinformatics

• Assistant Professor of Molecular Nutrition (2008.268)

Keywords: Molecular biology, metabolic syndrome, nutrition, physical exercise

• Assistant/Associate Professor of Biochemistry (2008.269)

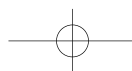
Keywords: biochemistry, inter organ metabolism, stable isotopes

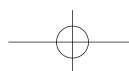
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For detailed information visit:

www.unimaas.nl/researchpositions





Look for career opportunities at
www.netherlandsproteomicscentre.nl

NPC scientific program:

- cancer proteomics
- proteome biology of plants
- proteome biology of micro-organisms
- proteome biology of stem cells
- new separation and enrichment tools
- chemical approaches to proteome biology
- new mass spectrometric tools
- bioinformatics in proteomics

The Netherlands Proteomics Centre (NPC) is a strategic collaboration of leading research groups from Dutch universities, academic hospitals and biotech companies. The NPC performs high-quality research in key areas of proteomics and knowledge transfer through specialized 'research hotel' facilities.



www.netherlandsproteomicscentre.nl



Postdoctoral and PhD positions in Biomolecular Mass Spectrometry and Proteomics

The Biomolecular Mass Spectrometry and Proteomics Group of Albert Heck is embedded in the departments of Chemistry and Pharmaceutical Sciences of Utrecht University's Faculty of Science. According to Time's Educational supplement 2008, the Chemistry Department is the leading research department in Europe.

The Biomolecular Mass Spectrometry and Proteomics group forms the core of the Netherlands Proteomics Centre. The group is strong in proteomics technology development (e.g. analysis of membrane proteins and post-translational modifications) and in macromolecular mass spectrometry. It has as focus areas stem cells, signaling and transcription, embryonic development, cardiovascular proteomics, chemical proteomics, virus assembly. The working language in the laboratory (and the university) is English.

In our enthusiastic thriving group we have several openings for Postdoctoral, PhD and technical positions in Biomolecular Mass Spectrometry and Proteomics.

We are seeking energetic, highly motivated individuals to further strengthen our group. The candidates should have know-how in proteomics or mass spectrometry, ideally with expertise in analytical chemistry, biochemistry/molecular biology and/or bioinformatics. He/she should be a team-player.

Detailed information on the group and the projects can be found at www.chem.uu.nl/bioms/vacancies.htm. For specific questions please contact the group via the groups secretary C. C. van Dijk, e-mail: c.c.vandijk@uu.nl



Universiteit Utrecht



Biomolecular Mass Spectrometry and Proteomics Group
 The Biomolecular Mass Spectrometry and Proteomics Group at Utrecht University is a state of the art laboratory at the core of the Netherlands Proteomics Centre. The general focus of the group is to develop and implement innovative mass spectrometric methods for the more efficient and detailed characterization of proteins in relation to their biological function.

Assistant/Associate Professor in Proteomics

We are seeking an energetic, highly motivated outstanding individual to further strengthen our efforts in the field of proteomics. This person should be able to establish his/her own research line, using the available expertise and infrastructure at the Group of Professor Albert Heck and Utrecht University.

Requirements:

The candidate should have a track-record in proteomics research, ideally with expertise in protein mass spectrometry, analytical chemistry, biochemistry/molecular biology and bioinformatics, as evidenced by a respectable list of publications. He/she should have the talent to initiate and set-up an independent line of research, be a team-player and able to acquire outside funding. Moreover, the candidate should have excellent teaching-skills and be able to motivate students and researchers alike.

Utrecht University, Faculty of Science:

The Faculty of Science consists of six departments: Biology, Pharmaceutical Sciences, Information and Computing Sciences, Physics and Astronomy, Chemistry and Mathematics. The Faculty is home to 3500 students and nearly 2000 staff and is internationally renowned for the quality of its research.

Additional Information:

For specific questions about this position, please email:
 Prof. dr. A.J.R. Heck, A.J.R.Heck@uu.nl.

For information on the employment conditions or application procedure, please contact: Science.peno@uu.nl.

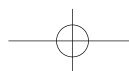
The Biomolecular Mass Spectrometry and Proteomics Group
www.chem.uu.nl/bioms
 Utrecht University www.uu.nl
 Netherlands Proteomics Centre www.netherlandsproteomicscentre.nl

Sending your applications:

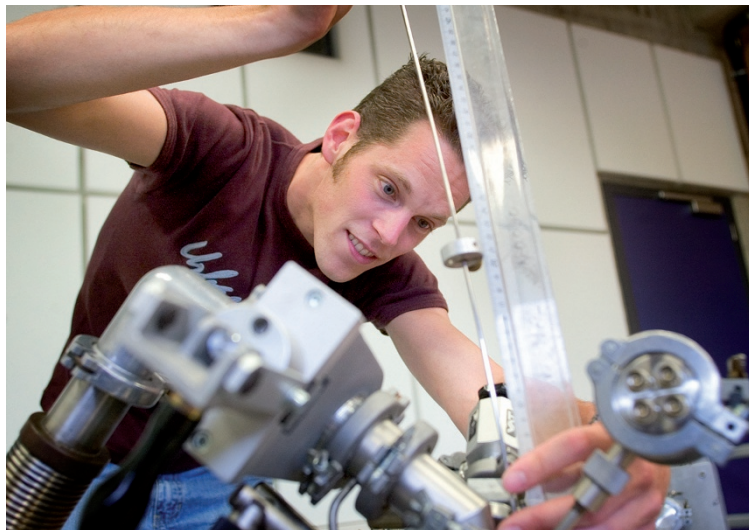
Your application (including a letter explaining your motivation and suitability for the position, a full CV, a concise research proposal and a transcript of academic results) should be emailed to Science.Peno@uu.nl. Please mention vacancy number 65824.

Closing date: 31 December 2008

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ADVERTISING FEATURE



Faculty of Science @ Radboud University Nijmegen

Focus on pervasive science

With Europe's strongest magnet in our backyard the Faculty of Science of the Radboud University Nijmegen makes a clear statement: we focus on internationally renowned excellence in research. And to do so we dare to invest in intriguing, powerful machines as well as in extraordinary scientists with the power to push the boundaries of today's knowledge.

Housed in a brand new dynamic building that spurs cross-disciplinary communication, the Faculty of Science of the Radboud University Nijmegen has set the stage for generating and disseminating valuable new scientific ideas. With all major sciences present (physics, chemistry, biology, mathematics and informatics) and with our strong focus on fundamental curiosity-driven research, Nijmegen maintains a broad base for our top research. Our research can be epitomized in two words: pervasive science. On the one hand we delve deep into the fundamental principles of nature by our integrated approach of theory and experiment. On the other, pervasiveness is found in the multidisciplinary approach to fundamental problems in which collaboration and shared knowledge are key elements. Our focus on pervasive science is not restricted to topics within the Faculty of Science. In close collaboration with the University Medical Center and with the Faculty of Social Sciences, our biophysicists,

neurophysiologists and cell biologists are active in the Nijmegen Centre for Molecular Life Sciences and in the new Donders Institute for Brain, Cognition and Behaviour.

As well as breadth there's also vigour: research is thriving here. This year alone two advanced grants from the European Research Council have been awarded to astrophysicist Heino Falcke and microbiologist Mike Jetten, and FP7 subsidy for solid state physicist Theo Rasing and Roeland Nolte (organic chemistry). 2007 closed books with a 1000 scientific publications, many of them in high ranking journals like *Nature*, *Science* and *PRL*.

To name a few highlights – amongst others: the discovery of the role of microbes in the earth's chemical cycles – notably the anammox bacterium – has led to numerous high-impact publications from Professor Mike Jetten's group in recent years; Professor Mikhail Katsnelson has made important theoretical contributions to the recent discoveries

Radboud University Nijmegen



Faculty of Science Radboud University Nijmegen

Students: 1,700
 PhD Students: 226
 Professors: 55
 Staff: 950
 Annual budget: 75 M€
 Dissertations: 74
 Scientific publications in 2007: 989
 Professional publications in 2007: 65



on graphene; Professor Theo Rasing has won the Spinoza Award 2008 – also dubbed the Dutch Nobel prize – for his groundbreaking research on magneto-optical spin manipulation.

State of the art infrastructure

We are known for developing excellent spectroscopic tools and building state of the art research infrastructure. Both give researchers a head start in their investigations. Our faculty's largest research institute, the Institute for Molecules and Materials (IMM), has established a leading role with large-scale facilities such as the High Field Magnet Laboratory, the NMR-Pavilion and the NanoLab. The presence of these unique facilities reflects our philosophy: scientific breakthroughs and cutting-edge technology go hand in hand. It's precisely because of this philosophy and because of our track record in designing such facilities that, in 2006, the Dutch government awarded Nijmegen an unprecedented 33 M€ grant to expand our research infrastructure with a Free-Electron Laser and a record-breaking 45-tesla hybrid magnet.

Job opportunities

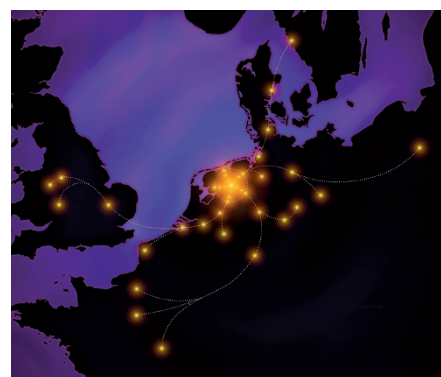
Faculty of Science, Radboud University Nijmegen, The Netherlands
Please see www.ru.nl/english > Job opportunities.

Furthermore, the IMM contributes to a university-wide programme called 'Molecule to Man', which comprises the chain of knowledge to visualize molecular and biological processes at all the relevant length scales.

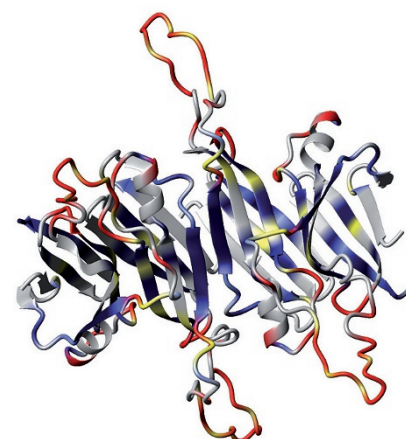
Our astrophysicists and high-energy physicists participate in experiments that use specialised equipment to observe ever smaller and ever more remote objects. Staff at the Institute for Mathematics, Astrophysics and Particle Physics (IMAPP) is actively involved in science performed at, amongst others, the Pierre Auger Observatory in Argentina, the Fermilab near Chicago, the Lofar radio telescope project at Dwingeloo in the Netherlands, and the Atlas experiment in the new CERN particle accelerator in Geneva for the discovery of the Higgs boson.

Towards the future

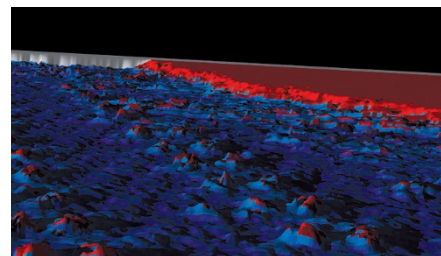
In order to ensure Nijmegen's leading contribution to scientific progress in the near future, the Faculty of Science has made the strategic choice to strengthen its internationally acclaimed research with a significant expansion of its staff in the coming months and years.



A schematic layout of the LOFAR radio telescope, centered in the Netherlands, with stations distributed throughout Europe. This will become the world's premier low frequency radio telescope in the coming years and will be used to investigate among others the radio emission from black holes and ultra-high energy cosmic particles, as studied by Heino Falcke in his ERC project.



Pervasiveness is found in the multidisciplinary approach to fundamental problems in which collaboration and shared knowledge are key elements. For example: our imaging facilities come to use in understanding the molecular base of neurodegenerative diseases like Alzheimer's and Parkinson's disease where plaques are formed from amyloids. A mutated form of transthyretine amyloid is shown here, with its B-strands open to form hydrogen bonds with other mutated transthyretines.



Topographic Scanning Tunneling Microscopy image acquired in a liquid cell showing catalytic molecules (red) adsorbed on a monolayer of solvent molecules (blue) on a monocrystalline gold surface (not exposed). Molecules change their topographic signature characteristically when they bind with oxygen. The individual oxidation reaction of another molecular species can thus be monitored on a nanoscale. This work is typical of the collaboration between chemists and physicists in Nijmegen.

ADVERTISEMENT FEATURE

Leiden University Medical Center, center of medical Spanning disc



Prof Dr Christine Mummery
“We’re creating our own
research matter and building
knowledge”



Prof Dr Gert Jan van Ommen
“The only limitation to a research
approach is our own fantasy or
viewpoint”

The Leiden University Medical Center (LUMC) embraces and develops new technologies. At the heart of its research strategy lies translational research. The LUMC applies the results of its scientific research in the clinical setting of the hospital and conversely, brings clinical observations and questions back to the laboratory. Furthermore, the LUMC’s multidisciplinary approach brings together a great diversity of research fields with new techniques and technology providing a common denominator.

When the LUMC’s Department of Human Genetics run by Professor Gert Jan van Ommen holds its weekly departmental project meeting, there are over 50 attendees, representing all of the 10 working groups. “It is a very diverse, open group with an enormously broad range of expertise,” explains Van Ommen. “This means there’s plen-

ty of room for cross-fertilisation. In fact, the only limitation to a research approach is our own fantasy or viewpoint. The common denominator is that different diseases are being approached using the same mix of technologies.” Professor Van Ommen is also the founder of the Leiden Genome Technology Center, a principal genom-

ics facility in the Netherlands, and the Director and Principal Investigator of the Center for Medical Systems Biology (CMSB), one of the four Centers of Excellence established in 2003 by the Netherlands Genome Initiative. His work at the LUMC and through the CMSB fuels the idea that hidden links exist between clinically different disorders. “We felt,” says Van Ommen, “that if you could place the disease process in the perspective of the changes of the system, then you could in fact come up with predictions that were more robust than if you only looked at one specific alteration.”

Adopting new technology

From an early stage, Van Ommen has felt that diseases may be caused by disturbed equilibrium, resulting in a combination of altered genetic processes. His work at the LUMC and through the CMSB takes this idea further. His research shuttles between detecting causes of rare diseases and painting a bigger picture by identifying biomarkers that create a molecular signature. It is an approach that has led Van Ommen to adopt and develop new technologies, such as high resolution, high throughput omics technology, or the exon skipping therapy for Duchenne muscular dystrophy, now in successful clinical development with a Leiden University spinoff company, Prosensa. “Using new technology to approach existing and nagging problems usually gives new translational opportunities simply because you get data at a much better

innovation

ciplines

resolution,” says Van Ommen. “It’s like having a much higher watch tower at the end of an island. It means you can look much further and extend your horizon.” This drive for innovation is common throughout the LUMC – and the benefits span the disciplines.

Creating disease models

Professor Christine Mummery in the Department of Anatomy and Embryology is well-established in the field of stem cell research. Although her research work focuses on the developmental biology of the heart, she and her laboratory have the skills to generate and characterise human induced pluripotency stem (iPS) cells. “We can now create our own disease model derived from adult tissue,” says Mummery, “Not only do you then have the mutation in the cell, you also have the gene in its right environment. So then you can see if people are predisposed to particular responses.” Mummery’s ambition is to develop a national platform for the production of control and patient-derived iPS lines for modelling disease, investigating predisposition factors causing disease phenotype and drug responses, and developing strategies for drug design. The LUMC would generate, characterise and supply human iPS cells to clinical departments supplying skin biopsies from their own patients of interest. “We’re creating our own research matter and building knowledge,” says Mummery. “The permutations and combinations are really quite limitless in terms of what you could potentially do.”

Networking for perspective

This on-site supply of resources, be it from the clinics or from the labs, is obviously one of the major advantages of the University Medical Center. “The LUMC works hard to improve and support inter-departmental and inter-division collaboration,” says Mummery. “Everyone goes to the same places, the same seminars, and that’s where you talk to each other.” It is a question of networking but it is also a means of identifying and seizing opportunities, enabling clinicians to think about the implications of new developments in the lab and giving researchers insight into how their studies can work in practice. “It was one of the reasons I came to the LUMC,” says Mummery. “It puts your work in perspective.”

About the LUMC

Leiden University Medical Center continually seeks to improve the quality of healthcare. It aims for excellence in patient care, research, teaching, training and continuing education by investing in healthcare-related research and endeavouring to consolidate its leading international position.

The LUMC comprises the Leiden University Hospital and the Faculty of Medicine at Leiden University. It is part of the Bio Science Park, one of the top five most successful science parks in Europe, and maintains its position amongst the international elite through its centers of excellence and research focuses.

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Wageningen University and Research Centre

For quality of life



Prof. dr. Willem de Vos

‘To explore the potential of nature to improve the quality of life’. This is the motto of Wageningen UR (University and Research Centre). Scientists and students focus on subjects such as food, nutrition, health, foodproduction, climate, water, nature and our everyday surroundings, making Wageningen UR the ideal location for multi-disciplinary and global cooperation to explore the key social and economic issues of today and tomorrow.

Issues within Wageningen UR’s sphere of activity rarely have an exclusively scientific, technological or social nature. “There is always a range of possible angles and directions to find new solutions,” says Professor of Microbiology Willem de Vos. “Wageningen UR feels very strongly about the integration of research areas. We ensure that scientists do not become isolated but work closely together with other disciplines.

A major benefit of this modus operandi is that it provides options to apply the acquired knowledge in policies and in practice. Our scientific breakthroughs have a genuine impact on society.”

Award-winning talent

In 2008, De Vos won the Spinoza prize, the most prestigious Dutch science award, for his pioneering work on how microorganisms such as bacteria contribute to our food and health. “Wageningen UR provides the right facilities, allowing me to be flexible with research and educational activities within my science group,” De Vos continues. “It also enables me to attract talented individuals from the Netherlands and abroad who can carry out groundbreaking fundamental scientific research.”

“This approach is one of the reasons why there are more PhD students at Wageningen UR than at any comparable Dutch university. We give young scientists plenty of opportunities and they are stimulated to dedicate themselves to science.” Research is currently being performed in 90 science groups, nine applied and market-oriented research institutes such as Alterra (environmental sciences) and the Agricultural Economic Research Institute (LEI) that are part of Wageningen UR. The third pillar is the Van Hall Larenstein University of Applied Sciences, which is the largest ‘green’ learning institute of its kind in the Netherlands.

International

In addition to its leading position in the Netherlands, Wageningen UR has a clear international appeal. “We have numerous partners all over the world and actively participate in EU projects,” De Vos explains. “This attracts many scientists and

students from outside of the Netherlands to Wageningen, helping create a highly productive melting pot of nationalities and cultures.”

Wageningen UR is dedicated to making a concrete and fundamental contribution to the key issues of our times, such as addressing the availability of sufficient healthy nutrition, dealing with climate change, and developing a sustainable energy supply. With this in mind, Wageningen UR is seeking people with an open mentality towards global developments.

Job opportunities

In addition to vacancies in prof De Vos his group in the area of molecular microbiology, positions are currently available for PhD students, postdocs and researchers at the Plant Sciences Group. And RIKILT - Institute of Food Safety is looking for a bioinformatics scientist for toxicometabolomics, see Naturejobs.com for details.

For all vacancies at Wageningen UR, please visit www.jobsat.wur.nl, which also reveals all you need to know about research and education at Wageningen UR.



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Going Dutch in Healthcare Innovation



If you're looking for challenging research posts in life sciences research, turn your eyes to the Netherlands.

The Center for Translational Molecular Medicine, Top Institute Pharma and the BioMedical Materials program are three Dutch public-private partnerships dedicated to sharing the knowledge and resources of universities, knowledge institutes, academic medical centers, SME's, high-tech start-ups and global companies in the pursuit of better healthcare.

World leaders in life science research and development, they focus on the three interconnecting pillars of modern medicine:

Center for Translational Molecular Medicine (CTMM) addresses early, accurate *Diagnosis* – the key to preventing or minimizing the effects of disease, defining appropriate treatments and monitoring therapies (for example, through advanced imaging techniques).

Top Institute Pharma (TI Pharma) focuses on *Drugs* – conducting groundbreaking, cross-disciplinary research and offering advanced training programs. It aims to improve the efficiency of the drug discovery process.

The BioMedical Materials program (BMM) focuses on *Devices* – bringing to reality the vision that BioMedical Materials will play a key role in achieving medical breakthroughs that will enable the functional repair and regeneration of tissue, and in the future, possibly organs.

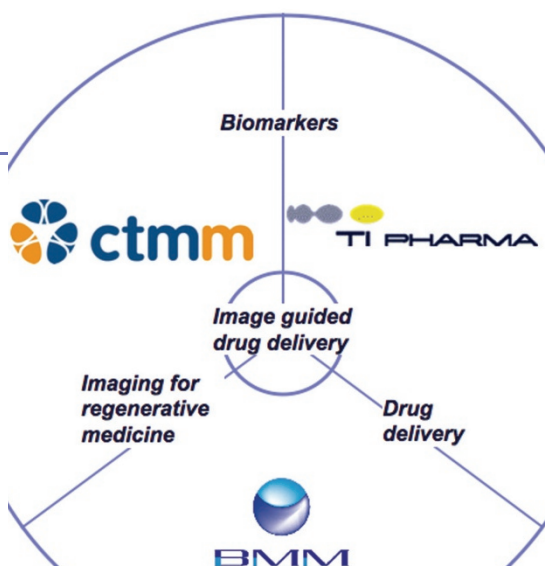
To push forward this leading-edge life science research, we are looking for highly talented PhD students, Postdocs, Scientists and Senior Scientists. If you're a highly qualified life-science research professional and you want to be part of the action, take a look at our **vacancy lists** or submit an open application on:

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Based in various locations throughout the Netherlands, these highly challenging research posts offer excellent opportunities for academic development and career advancement.

CTMM: *diagnosis*

- ▶ Early detection of disease by in-vitro and in-vivo diagnostics
- ▶ Stratification of patients for personalized treatment
- ▶ Assessing efficiency and efficacy of medicines by imaging
- ▶ Image guided delivery of medication
- ▶ Focus on cancer, cardiovascular, neurodegenerative and infectious disease



TI Pharma: *drugs*

- ▶ Translational research on novel pharmaceutical therapies
- ▶ Target finding, animal models and lead selection
- ▶ Validation of biomarkers and bio-sensing
- ▶ Drug formulation, delivery and targeting
- ▶ Special platform focusing on efficiency improvement of the drug development process

BMM: *devices*

- ▶ Smart drug delivery systems
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- ▶ Novel BioMedical Materials and their applications



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In May 2008 fifty talented scientists from 18 different countries explored the Dutch life sciences sector. A four day programme "International Talent meets Dutch Life Sciences" introduced them to academic medical centers, research institutions and biotechnology, pharmaceutical and medical device companies. They were impressed with the many opportunities on offer and several have already taken up positions.



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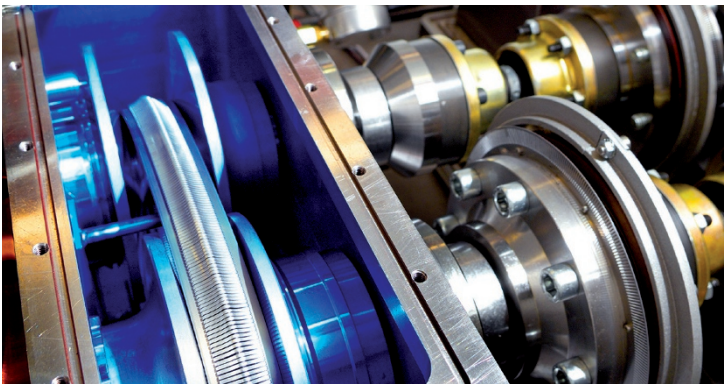
High-tech research with industry

Eindhoven University of Technology (TU/e) is situated right in the middle of European technology hotspot “Brainport Eindhoven”. Here, in The Netherlands, TU/e inspires talented scientists to reach their full potential. Around 3,000 staff and 7,000 students join forces to perform highly distinguished, innovative research and develop top talent – in ambitious research groups with scientists from all over the world. Two examples of TU/e research in the spotlights.

TU/e has clustered its research activities within the following eight research areas:

- Biomedical Engineering Sciences
- Broadband Telecommunications Technologies
- Catalysis and Process Engineering
- Logistics, Operations and Information Systems
- Mechanics and Control
- Nano-engineering of Functional Materials and Devices
- Polymer Science and Technology
- Science and Engineering of Embedded Systems

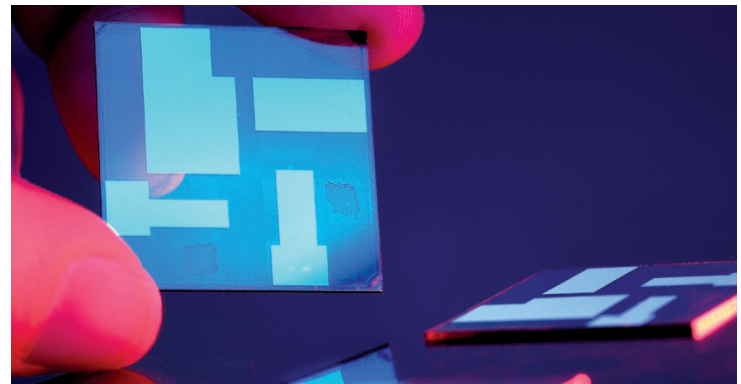
Cleaner, more fuel-efficient cars: a huge challenge



We all love the idea of an electric car, but not if you have to recharge it every 30 miles. Or a hybrid, of course, but then only if it's affordable. No one's too eager to give up performance, comfort or safety, either.

All these conflicting needs make designing the car of the future incredibly complicated. TU/e is renowned worldwide for its automotive research. It's where the automobile industry turns for advice. What's the best tactic, say, for the battery system in electric cars? Should you opt for high efficiency or long lifespan? TU/e develops tools that help designers. Models that simulate the interaction between all of the components. If you change one part, how will it affect the whole car? Beyond that, TU/e works on improving the parts themselves: from active restraint systems to continuously variable transmissions (see picture). Not to mention improving existing technologies, such as internal combustion engines and fuels. After all, the car of the future won't be built overnight.

Plastic solar cells: scrutinized from molecule to device



They weren't focused on the energy problem. It was pure scientific curiosity, an experiment by a group of chemists ten years ago. Could it be done? Using polymers to generate power?

The answer was Yes – but the output was disappointing. Still, the idea of making solar cells out of plastic was born: inexpensive, flexible plastic as an alternative to silicon solar cells, which are expensive and laborious to manufacture. Ten years on and that idea is taking shape. The plastic solar cells are being tested in the labs of TU/e. Efficiency has been increased to 5 percent. Still too low: the goal is 10 percent. But you can only get there by knowing what is going on inside the solar cell. What happens to the remaining 95 percent of the energy? How can you limit that loss? TU/e studies every aspect, from the molecule to the device: the composition of the polymer, the design of the solar cells, the quality of the electrodes. Fundamental research with a clear goal: to enable the large-scale manufacture of cheap solar cells.

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Contact information:

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Materials innovation institute (M2i) (previously Netherlands Institute for Metals Research) is one of the leading technology institutes in the Netherlands that was founded in 1997. M2i is a public-private partnership between the Dutch government, industry and knowledge institutes in the Netherlands and Europe. M2i conducts fundamental and applied research in the fields of structural and functional materials. By working closely together with high level academic and industrial partners, the institute delivers new materials for economic growth of the Dutch industry and for creating a sustainable society.

Research Opportunities at M2i

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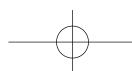
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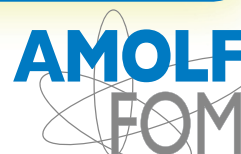
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