

Press release

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The FNR's Research Programmes ATTRACT and PEARL

Three Outstanding Researchers from Germany, the USA and Switzerland Have Joined Luxembourg's Research Landscape

In recent years, the National Research Fund has set in place two new science funding programmes aiming to entice foreign researchers to come to Luxembourg. One of these, called PEARL, is aimed at established scientists, whereas the other, entitled ATTRACT, provides opportunities for promising researchers at the start of their career. Through the building of new research capacity and the fostering of new research ideas, these programmes complement the FNR's existing portfolio of instruments, which mainly support the ongoing research in Luxembourg. ATTRACT (financial contribution by the FNR up to 1.5 M EUR) and PEARL (financial contribution by the FNR up to 5 M EUR) have now enabled the University of Luxembourg, the CRP Gabriel Lippmann and the CRP-Santé to recruit three outstanding researchers from Germany, the USA and Switzerland: Dr Andreas Michels, Dr Paul Wilmes and Prof. Dr Bruno Domon.

ATTRACT 2009

Dr. Andreas Michels is doing research in the Physics Department of the University of Luxembourg thanks to the FNR whilst Dr. Paul Wilmes strengthens Luxembourg's research in Environmental Microbiology at the CRP Gabriel Lippmann

Launched in end of 2006

2007 Call: 1 Candidate Selected

2008 Call: The FNR decided not to select any of the candidates

2009 Call: 2 Candidates Selected

The ATTRACT programme aims to build on the dynamism of the young Luxembourg research environment by attracting young researchers with a high level of ability in science or technology and proven experience in a professional research context.

The programme is designed for researchers not yet established in Luxembourg and it offers them the opportunity to set up an independent research team within a public-sector research institution in Luxembourg. Research proposals are submitted jointly by the candidate and the host institution and each project is evaluated in writing by 3 independent international experts in the field. In addition to the written evaluation the candidates have to present and defend their project in front of a panel of experts. Projects selected under the ATTRACT programme have a lifespan of five years and the financial contribution by the FNR will be up to EUR 1,500,000.

The candidates are evaluated based on their track-record and their potential to lead a productive research team. In addition the panel evaluates the merits of the research project proposed in terms of scientific quality, originality and efficiency of the project plan.

In 2009, the panel decided to retain 2 of 4 candidates. It was convinced that both candidates bring great value to the research system and will undoubtedly strengthen two vital areas for Luxembourg. The two selected candidates – Dr Andreas Michels and Dr Paul Wilmes – show exceptional track records and have great potential to become major players in their field of research. The National Research Fund will help these researchers to integrate into the R&D environment in Luxembourg and setting up networks of scientists or research teams working in similar and/or related fields in Luxembourg.

Dr. Andreas Michels: studying the effect of microstructure on the magnetic properties of nanocrystalline rare-earth-based bulk magnets

Dr Andreas Michels (8 years postdoc experience) is an experienced researcher and has gained strong methodological background at his previous appointments at the University of the Saarland, the Paul Scherrer Institute in Switzerland and the Research centre in Karlsruhe. He complements the existing knowledge base and can interact significantly with the existing research competences at the UL and the Public Research Centres. Dr Michels' project "Rare-Earth Nanomagnetism" is focused on studying the effect of microstructure (grain size) on the magnetic properties of nanocrystalline rare-earth-based bulk magnets.

Classically semi empirical strategies were employed to understand and improve properties of these nanocrystals. This project proposes a systematic study on correlation between macroscopic properties and microscopic details of spin microstructure using magnetic neutron scattering and new neutron polarization analysis. These are powerful methods for resolving spin distributions (defects) in the bulk of a material and on the nanoscale.

The ATTRACT project will thus improve the understanding of the interplay between the macroscopic magnetic parameters and the local microscopic details of the spin structure of these magnetic materials, and it will provide quantitative insights into magnetic neutron scattering from nanomagnets. Nanomagnets have widespread industrial applications such as the manufacture magnetic devices like computer hard discs.

Dr Paul Wilmes: investigating the fate of organic macromolecules in wastewater treatment

Dr Paul Wilmes (3 years postdoc experience) is a younger investigator showing great enthusiasm, interest and knowledge in the emerging field of molecular ecology. Dr Wilmes' research interests match the research infrastructure provided by the CRP-Gabriel Lippmann and the CRP-Henri Tudor. Furthermore the systems biology nature of the project is particularly attractive in view of a potential cooperation with the Centre for Systems Biomedecine at the University of Luxembourg (CSBL) which has been established within the context of the US-LUX biotech initiative. Coming from a high-profile research centre and academic lineage at the University of Berkley, he has the potential to make Luxembourg a major player in the area of

environmental microbiology. As a young researcher he stands at the very beginning of a potentially promising career.

Paul Wilmes' project involves a state-of-the-art systems biology approach to study natural microbial biofilm assemblages that form the backbone of biological wastewater treatment systems. The project aims to provide much-needed fundamental insight into microbial community structure and function. This knowledge will facilitate efficient, reliable and predictable biological wastewater treatment processes in future. Furthermore, the proposed research will investigate the fate of organic macromolecules in wastewater treatment in order to manage these bioenergy resources more efficiently in the future. Consequently, the proposed project encompasses both fundamental and applied research of immediate interest to Luxembourg.

PEARL 2009

Prof. Dr Bruno Domon from the Swiss Federal Institute of Technology in Zurich is setting up clinical proteomics-research in Luxembourg together with the CRP-Santé and the FNR

Launched in July 2009

2009: 1 Candidate Selected, 1 Candidate in evaluation

The PEARL research programme targets internationally leading senior researcher and gives them the opportunity to transfer your research programme to a public-sector research institution in Luxembourg and thus to accelerate the development of and to strengthen Luxembourg's research priorities. PEARL offers institutions a flexible and highly attractive tool to recruit established and recognized senior researchers and this should help institutions implement their strategic development in specific areas of importance to Luxembourg.

The recruitment of excellent PEARL grantees contributes to increasing the quality of Luxembourg's research environment through creating a kernel for building critical mass. The grantees' research activities should integrate into the institutions programme and create synergistic effects with the existing research fabric to multiply the scientific output within the research field (i.e. to have a pull effect on the overall scientific quality within a specific field). The grantees should be leaders in the field, innovative, creative and possess an outstanding track record that will strengthen Luxembourg's position in the international world of R&D.

Through this programme the FNR offers the research institutions substantial additional funds (3-5M€) to compete for the best candidates. The FNR foresees to grant 1 to 2 PEARL awards per year.

Clinical Proteomics Initiative in Luxembourg

The proposal of Prof. Dr Bruno Domon and the CRP-Santé was received in September 2009 and was reviewed by 3 independent international experts. Prof Domon and the directors of the CRP-Santé presented their proposal in front of a panel constituted of 6 high level experts of the field.

The selection criteria focus on the strategic value, innovativeness and feasibility of the project as well as the potential return of the project in terms of publications or intellectual property.

The panel has unanimously expressed considerable enthusiasm for the proposed initiative and views the proposal as an outstanding opportunity for Luxembourg.

Prof Domon proposed the creation of a 15 person clinical proteomics team at the CRP-Santé to develop proteomics-based diagnostics. The initiative will closely collaborate with other Luxembourg institutions i.e. the University of Luxembourg, the Center for Systems Biomedicine of Luxembourg (CSBL), and the Integrated BioBank of Luxembourg (IBBL) in order to integrate knowledge from other omics technologies and contribute to the overall goal of setting up personalized medicine in Luxembourg. The CRP-Santé's close proximity to the patients at the Centre Hospitalier du Luxembourg (CHL) will enable true translational 'bench to bed-side' research such as the development of innovative clinical diagnostics, and their direct application in clinical trials (e.g. drug response studies). Overall the total project costs are 14M€ for the coming 5 years where the FNR will contribute a total of 5M€.

Prof. Bruno Domon was a Senior Group Leader at the Institute for Systems Biology (ISB) at the Swiss Federal Institute of Technology in Zurich. Moreover, he has had considerable experience in high-profile Biotech companies in the US. He was section head of the proteomics department at Biogen and Director of Proteomics/Mass Spectrometry at Celera Genomics in Rockville Maryland.

Prof Domon has published in several high-profile peer-reviewed journals and has demonstrated the ability to perform outstanding research in the field of mass spectrometry and protein analysis. In this project, he partners with ThermoFisher, one of the leaders in life science technology, which ensures early access to novel technologies and instrumentation, and a close collaboration in the development of workflows and applications specific to clinical proteomics.

For further information about ATTRACT and PEARL, please refer to www.fnr.lu

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