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1. Yves Elsen
2. Jacques Lanners
3. François Meyer
4. Marc Schiltz







O 1 FOREWORD

Dear Reader,

With this Annual Report, the 2^{nd} FNR performance contract with the Government comes to an end. With great expertise and the autonomy enabling it to deal appropriately with new developments, the FNR has become a vital and acknowledged operator in the Luxembourg research structure.

After dynamic growth over the last 15 years, today the principal aim is to optimise the impact of public research. To that end, it is vital first of all to promote high-level scientific research which is competitive internationally. Indeed, the increase of research activities at the highest level in Luxembourg contributes to the country's renown, generating innovative ideas, attracting the best researchers and providing the best training of young researchers. All of this is necessary to obtain long-term economic results, particularly through cooperation with business or even the public sector. At the same time, quality research in the public sector (public research centres and university) has a positive impact on society, since it is society, its decision-makers and users, who benefit sustainably from new knowledge and skills, and researchers can assist political actors and administrations in a consultative role.

With a view to guaranteeing the competitiveness of the country over the long term, the FNR is working on the sustainable establishment of Luxembourg as a pole for international research and innovation. Consequently, a policy must be maintained to provide public research with the means it requires for past and future investments to bear fruit and to serve the national economy on a sustainable basis. So the FNR plays a triple role as a manager of public research, a guarantor of its quality and a pivotal operator in the promotion of scientific culture. In future, the FNR wishes to strengthen the collaboration between research and the economy. Sustainable and responsible exploitation of research results will contribute to a diversification and, as an adjunct, to renewal of the economic sector. The social impact will be a society which benefits from the skills of researchers and, after all, a knowledge society taking the path to a sustainable future. And it is this strategy which the FNR plans to follow over the term of its next performance contract.

Wishing you a pleasant reading!

Yves Elsen, Chairman of the Board Jacques Lanners, Vice-Chairman of the Board François Meyer, Chairman of the Scientific Council Marc Schiltz, Secretary General

02 OBJECTIVES, STRATEGY, POLICY

Since its creation in 1999, the Fonds National de la Recherche (FNR) has become a key actor in building a high-quality research system in Luxembourg. The FNR provides funding for all branches of science and the humanities with an emphasis on strategically aligned research domains. A Performance Contract, concluded with the Government, sets the budgetary frame for the well-defined short- and long-term objectives.

Beyond its traditional role of funding agency, the FNR develops various thematic and strategic instruments that help to construct Luxembourg's profile as an international research site, notably by attracting excellent researchers from abroad, by fostering international collaborations, by promoting cooperations with the private sector, by promoting the industrial exploitation of research results and by supporting the training of researchers at PhD and postdoctoral levels. Furthermore, the FNR is actively promoting scientific culture and interest in research. With its current funding activities for public research, the FNR thus pursues a three-fold strategic objective:

- supporting researchers to build up scientific quality and excellence
- improving Luxembourg's research environment and institutional framework
- promoting scientific culture among the general public and the young

The FNR relies exclusively on independent peer review processes applying the internationally accepted quality standards when selecting which research projects to support. Within all its activities, the FNR encourages research projects that relate to Luxembourg's socioeconomic challenges and welcomes public-private partnerships involving Luxembourg's key players in R&D. Funds for research projects within the FNR's programmes are directed to the public research centres, the University of Luxembourg and public organisations, departments and establishments in Luxembourg that undertake research activities.

New International **Cooperation Agreements**

Projects evaluated

INTER Mobility Research Stays

New PEARL Chairs

New ATTRACT Fellow

New AFR PhD Grants

New AFR Postdoc Grants

New AFR-PPP & Core-PPP

New PSP - Promoting Science to the Public Projects

New CORE, OPEN, **INTER & POC Research Projects**

MEUR committed

RESCOM Conferences, Workshops & Lecture Series funded

visitors@Science Festival

visitors@science.lu

fans@www.facebook.com/ science.lu

O4 OUTLINE OF THE FNR'S MAIN ACTIVITIES 2013

The 2013 report is not only interesting from an annual perspective, but this year it also marks the end of the 2011-2013 performance contract. According to the objectives set by the performance contract, inter alia the FNR developed and implemented a programme to take full advantage of research results in a socio-economic manner and it worked on a pilot project to develop a national centre of excellence in research, intended to develop the critical mass even further. In addition, and as planned, the FNR developed a consistent strategy to provide effective support for sustainable international cooperation between national operators and foreign research institutions of global renown: indeed, several collaboration agreements were concluded between 2011 and 2013. The FNR also made an active contribution, jointly with its international counterparts, to the discussions concerning European and international R&D policy, particularly by participating in the work of Science Europe, of the Global Research Council and several working groups.

FNR LAW AND NEW PERFORMANCE CONTRACT

The bill of law, amending the FNR Law, was lodged in April 2012. Following installation of the new Government, and in line with tradition concerning bills of law awaiting the decision of the Chamber of Deputies, the bill was sent to the Commission for Higher Education and Research on 12 December 2013.

Negotiations on a new performance contract, covering the period from 2014 to 2017, were begun in 2013 and are ongoing following the change of Government.

FNR FUNDING INSTRUMENTS

In 2013, the FNR evaluated 844 proposals submitted within the framework of its various instruments and granted funding to 72 projects in relation to the CORE, INTER, INTER Mobility, OPEN, ATTRACT, PEARL and PoC programmes, to 99 AFR PhD candidates, to 49 AFR Postdoc candidates and to 92 RESCOM or PSP proposals. With regard to funding programmes, the FNR not only made simplifications or improvements but also implemented some new programmes.

PROOF-OF-CONCEPT

The Proof-of-Concept programme was introduced, with the aim of encouraging the conversion of research results into economically exploitable innovations by financially supporting researchers in their efforts to make their ideas more attractive to potential investors. By facilitating a successful transfer of innovations to society, this initiative should have a clear positive impact on the economy of Luxembourg. The FIELDSPEC project of Dr. Laurent Pfister, already submitted in 2012, was retained for funding in 2013. In 2013, the FNR received seven proposals; of those proposals, the FNR has already retained the MycromeDX project of Dr. Paul Wilmes. Two other proposals are still being evaluated. In 2013, the FNR also decided to provide financial support to a pilot project for the development of an enhancement structure with the SnT Interdisciplinary Centre (University of Luxembourg).

National Centre of Excellence - NCER

Within the framework of the 2011-2013 performance contract, the general idea of launching a programme to support the establishment of a National Centre of Excellence (NCER) was retained. Considering the progress on the *Personalized Medicine* project and the development of the LCSB, the FNR concluded that the field of research on Parkinson's disease offers niche potential for a pilot project for a first centre of excellence. On the basis of a pilot project with various actors (CHL, CRP-Santé, IBBL and LCSB) the FNR launched a first call for a Centre of Excellence in Luxembourg on the early detection and stratification of Parkinson's disease. Evaluation of the proposal will be completed at the beginning of 2014.

OPEN

The new OPEN programme is a thematically open programme, for which a first call was launched in 2013 as a pilote phase. Two high-quality projects were retained in fields outside the priorities of the CORE programme. The second call was launched in November 2013.

CORE

Following the call for CORE 2013, the FNR received 153 pre-proposals, one of which was refused. Finally, 133 full proposals were received by the FNR. After evaluation in line with international standards, 33 high-quality and internationally competitive scientific projects were retained involving a total amount of MEUR 20.3. Under the CORE *Junior Track* instrument, enabling researchers to begin their careers, 6 out of 32 submitted proposals were retained.

ATTRACT

In order to present the scientific and economic interest to attract first-class young researchers to Luxembourg, the FNR organised the Jules Hoffmann Nobel Laureate Symposium involving Professor Jules Hoffmann, Winner of the Nobel Prize for Medicine and several ATTRACT Fellows of the FNR in a round table entitled ATTRACTing Future Research Leaders to Luxembourg (read more on p.16).

In 2013, the eight current FNR ATTRACT Fellows, introduced in films shown at the Symposium, were joined by Dr. Cesar Pascual Garcia [CRP Gabriel Lippmann], to whom the FNR granted funding of MEUR 1.5. Dr. Garcia is working on the manufacture of "nano" captors using electro-chemical means. Three other applications were refused.

PEARL

In 2013, the FNR evaluated three projects for the PEARL programme and decided to retain two of them: the project of Dr. Jens Kreisel (CRP Gabriel Lippmann), who occupies the post of Director of the Materials Science and Analysis Department, and the project of Dr. Rejko Krüger (LCSB-Luxembourg Centre for Systems Biomedicine, University of Luxembourg), who has put a clinical research team in place jointly with the Luxembourg Hospital Centre. Dr. Kreisel will be studying multifunctional ferrous materials whilst the research by the team led by Dr. Krüger will focus on Parkinson's disease. The FNR granted MEUR 5 to each of these two projects.

INTER

In 2013, the FNR evaluated 153 project proposals submitted for the INTER programme. It granted funding to 20 projects with a total commitment of MEUR 7.65. In addition, the FNR evaluated 25 mobility proposals, of which 11 were retained for a total budget of MEUR 1.17. (read more on p.24)

AFR PHD & POSTDOC GRANTS

For 2013, 99 out of 283 proposals submitted for Doctorates and 49 out of 104 proposals submitted for Post-Doctorates (the majority of which are also co-funded by the FP7 Marie Curie People programme) were selected for AFR funding. For 2013, a sum of approximately MEUR 29, with approximately MEUR 1 covered by the COFUND contribution, was dedicated exclusively to the salary costs of beneficiaries most of whom work under a contract of employment with their host establishment. As for the AFR PhD and Postdoc Grants, administrative simplification was finalised with integration in the AIMS online system for beneficiary reports.

Furthermore, the AFR instrument continues to be extremely active at other levels. Indeed, the FNR offered its AFR beneficiaries training sessions on project management and training entitled *From Learning to Earning*. Some one hundred beneficiaries also attended the 3rd AFR Networking Day entitled *From Skills to Careers*, on the subject of careers as researchers (read more on p.18).

Among the 415 current AFR research projects, 38 are in public-private partnership (AFR-PPP). In order to strengthen collaboration with business, the FNR brought together AFR-PPP beneficiaries and representatives of the FNR and the University of Luxembourg at an exchange session entitled *Researcher-Entrepreneur*.

At an international level, the FNR pre-selected two young researchers each for the 64^{th} Annual Lindau Nobel Laureate Meeting and the 5^{th} Annual Lindau Nobel Economics Laureate Meeting. In addition, the FNR retained an ERCIM application in 2013.

RESCOM

With calls launched for the RESCOM instrument, 32 project proposals were submitted. 18 projects (6 International Scientific Conferences, 7 Exploratory Workshops and 5 Lecture Series) were retained for total funding of EUR 386,000. As for the funding of monographs, 32 applications were submitted, 12 of which were accepted for total funding of EUR 46,400 (read more on p.27).

PSP

The support instrument PSP - Promoting Science to the Public was requested 74 times in 2013. Among those requests, the FNR funded 62 projects. 98% of funded requests came from schools or were intended for children and young people. (read more on p.26)

NATIONAL & INTERNATIONAL COLLABORATION

The FNR was also extremely active internationally. New cooperation agreements were prepared and signed with France (ANR – French National Research Agency) and the United Kingdom (RCUK – Research Council UK). An agreement with Norway (RCN – Research Council of Norway) is being negociated. Exploratory visits were also made to Singapore and Turkey. (read more on p.21)

Numerous projects were submitted under different funding instruments supporting international cooperation. Indeed, within the framework of the International Co-funding instrument implemented under CORE, 3 of the 20 proposals submitted were accepted. These projects were submitted by eligible Luxembourg and foreign partners with the DFG (German Research Foundation), the SNF (Swiss National Science Foundation), the FWF (Austrian Science Fund) and the EMBL (European Molecular Biology Laboratory). Under the cooperation agreement signed with the ANR, 83 proposals were submitted and will be evaluated under the ANR's Programme blanc.

The cooperation with Luxinnovation was continued, promoting FNR funding instruments and the exploitation of public sector research results.

Within the framework of Nation Branding, the FNR is working inter alia with the University of Luxembourg, Luxinnovation, Luxembourg for Business and the Ministry of the Economy, on establishing two internet sites intended to promote biomedicine/biotechnologies (www.letzbio.lu) and eco-technologies (www.letzgreen.lu), sectors identified by the Ministry of Economy as priorities in the process of economic diversification in Luxembourg.

The FNR also regularly participated in meetings of Science Europe, the Global Research Council and a high-level workshop on the subjects of Open Access, cross-border collaboration and excellence within the European Research Area.

PROMOTION OF SCIENTIFIC CULTURE

In 2013, to increase the visibility of science and research with the general public in Luxembourg, the FNR maintained its media partnerships with RTL Télé Lëtzebuerg, Eldoradio, RTL Radio, and L'essentiel. Furthermore, a new partnership agreement with Radio 100.7 was concluded with a view to several programmes being broadcast in 2014. Seeking real exchange, the FNR also met with the general public at several events like the Science Festival 2013 [co-organised with the National Museum of Natural History], which welcomed some 12,000 visitors over four days (read more on p.19), as well as an information stand at the Student Fair. In addition, the FNR also supported the FJSL Concours Jonk Fuerscher.

In order to achieve the greatest visibility of all research operators on-line, the FNR and its partners launched a new web portal for the general public, children and young people as well as for teachers and other science communicators: www.science.lu. To date, the site has had some 60,500 visitors (since May 2013). In addition to this, there have been some 6,450 people joining the science.lu Facebook page. The Mr Science Facebook page has more than 1,400 fans. (read more on p.21)

As for training, in 2013 the FNR organised two media communication workshops (for researchers) and a training session with the National Youth Service.

Finally, at the end of 2013, the FNR completed the $3^{\rm rd}$ Survey of Awareness and Perception of Research with 500 respondents representing the Luxembourg population (earlier surveys in 2007 and 2011). The results suggest that a collective awareness in relation to research is emerging in the population. It will be necessary however to maintain communication efforts and above all to illustrate the impact of research for Luxembourg in a better way. (read more on p.37)

FNR AWARDS 2013

The 5th FNR Awards ceremony took place in October 2013. The FNR awarded prizes in the categories Outstanding Scientific Publications and Outstanding PhD Thesis as well as two prizes in the category Outstanding Promotion of Science to the Public. A Special Award for extraordinary commitment in the field of promoting sciences in Luxembourg was given to Fernand WAGNER, Vice-Chairman, Chairman and Honorary Chairman of the European Association for Astronomy Education. The presence of the Minister, Mrs Martine Hansen, underlined the importance of communication on research to make it more visible, both with the general public in Luxembourg and an informed international audience. (read more on p.20)

RESEARCH INTEGRITY

The FNR Commission for Research Integrity, set up in 2011, has handled several cases of alleged violations to good scientific practice.

Furthermore, the FNR took part in discussions on the treatment of integrity and ethics in research at a European level within the Global Research Council 2013. The FNR also actively participated in the working group set up by Science Europe in 2013, which serves as a platform for Member Organisations to formulate concrete recommendations for the handling of research integrity.

FORECASTS FOR 2014

The FNR will of course continue to launch calls for proposals via its various funding instruments: CORE, OPEN, ATTRACT, PEARL, POC, INTER, INTER Mobility, AFR, RESCOM and PSP.

Following the experience of the first six calls and a review of the selection process for CORE projects, a simplification of the project selection process was begun, whilst ensuring the maintenance of quality, and will be implemented from the 2014 call. Project selection will be on the basis of full proposals only, the pre-proposal phase having been abandoned.

The FNR also decided to make amendments to the ATTRACT programme to make it more attractive and competitive in comparison to similar programmes in other European countries.

As for AFR, the year 2014 will be dedicated to developing the new AFR collective funding instrument which is provided by the new Law. This instrument will enable the FNR to go beyond the funding of young researchers on a personal basis and to grant funding to groups of young researchers in eligible institutions.

The FNR will continue to act as a driving force in the field of scientific culture. One of the highlights of 2014 in particular will be the 4th edition of the Researchers' Days.

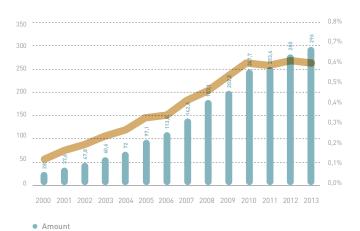
Regular press work and information events in relation to the FNR's instruments in 2014 will also ensure professional public relations and information as well as the sustainable networking of the research community.

The year 2014 will be marked by the entry into force of the new Law on $\,$ the FNR which provides for its amended governance. Consequently, new members will be appointed to the Scientific Council and to the Board of Directors. Negotiation of the new performance contract will also enable the FNR's strategic alignment to be renewed.

O5 STATISTICS 2013

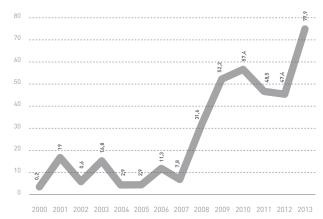
LUXEMBOURG INVESTMENTS

LUXEMBOURG PUBLIC INVESTMENTS IN PUBLIC AND PRIVATE R&D $(\mbox{MIO}\mbox{ EUR})$



FNR FUNDING

FNR: ANNUAL FUNDING COMMITMENTS (MIO EUR)



FNR COMMITTED 2013

% GDP

60 FNR-FUNDED PROJECTS	42.04 (MEUR)		
• 33 CORE Projects	20.3		
• 1 ATTRACT Projects	1.5		
• 2 PEARL Project	₹₹ 10		
• 20 INTER Projects	7.65		
• 2 POC Projects	1.59		
2 OPEN Projects	% 1.0		

30 RESCOM 62 PSP 11 INTER MOBILITY	2.2	7 (MEUR)
• 62 PSP	**	0.65
• 11 INTER MOBILITY)	1.17
• 18 RESCOM ISC, LS, EW, SUS	*	0.40
• 12 RESCOM SCM	•	0.05

148 AFR GRANTS	23.54 (MEUR)
• 99 AFR PhD Grants	18 24
• 82 4 th year extensions	
• 49 AFR Postdoc Grants	5.30

FNR COMMITTED PERF. CONTRACT 2011-2013

163 FNR-FUNDED PROJECTS	102.27 (MEUR)			
• 98 CORE Projects	56.19			
• 4 ATTRACT Projects	5.99			
• 4 PEARL Project	18.9			
• 53 INTER Projects	18.6			
• 2 POC Projects	1.59			
• 2 OPEN Projects	1 .0			

535 AMS 46 RESCOM 87 PSP 16 INTER MOBILITY		5.3 (MEUR)
• 124 AM1 + 87 PSP	*	1.69
• 148 AM2a	*	0.26
• 63 AM2b	*	0.15
• 34 AM2c + 16 INTER MOBILITY	1	1.8
• 60 AM3 + 27 RESCOM ISC, LS, EW, SUS	*	1.07
• 106 AM4 + 19 RESCOM SCM	*	0.34

438 AFR GRANTS	58.34 (MEUR)
• 294 AFR PhD Grants	4 4.74
• 269 4 th year extensions	<u>→</u>
• 144 AFR Postdoc Grants	13.6

PUBLIC-PRIVATE PARTNERSHIPS

CORE-PPP

International

	2008	2009	2010	2011	2012	2013	TOTAL
 National private partners 	5	4	4	3	5	5	28

F				
TOTAL			10	45

AFR-PPP 🗼

	2008	2009	2010	2011	2012	2013	TOTAL
• PhD	1	12	1	10	16	9	49
Postdoc	1	1	0	2	1	1	6
TOTAL	2	13	1	12	17	10	55

FUNDING INSTRUMENTS (STATISTICS OF ONGOING INSTRUMENTS 2006-2013)

17

LAUNCH DATE		PROGRAMME TITLE	NUMBER OF SUBMITTED PROPOSALS	NUMBER OF FNR FUNDED PROJETS	NUMBER OF FINISHED PROJETS	COMMITTED
2009	M	Excellence Award for Research in Luxembourg (PEARL)	8	6	0	27.27 (MEUR)
2008	m	CORE Thematic Programme	634	203	87	104.42 (MEUR)
2006	de	Attract Researchers to Luxembourg - Opportunities for Outstanding Young Researchers in Luxembourg (ATTRACT)	34	9	1	12.06 (MEUR)
2006	1	Promotion of International Cooperation (INTER)	310*	85	26	27.35 (MEUR)
2012	1	INTER Mobility	41	16	7	200.4 (TEUR)
2013	*	OPEN	8	2	0	1.0
2012	*Cor	Proof-of Concept	7	2	0	1.59
2008	*	AFR PhD Grants +BFR - AFR Transitions	1378	608 +247	211 +245	84.18 (MEUR)
2008	*	AFR Postdoc Grants	594	288	126	24.68 (MEUR)
2012	*	RESCOM International Scientific Conferences	26	10	2	321.1 (TEUR)
2012	•	RESCOM Exploratory Workshops	21	11	2	116.9 (TEUR)
2012	*	RESCOM Lecture Series	9	6	1	108 (TEUR)
2012	*	RESCOM Summer Schools	3	0	0	0
2012	*	RESCOM Scientific Monographs	57	19	10	49.7 (TEUR)
2012	*	PSP - Promoting Science to the Public	105	88	40	946.9 (TEUR)

CORE

SUM OF COMMITTED FUNDING (IN MEUR)/DOMAIN

DOMAIN			2009	2010	2011	2012	2013	Total
IS_Innovation in Services				2.72	3.79	3.75	3.78	19.80
SR_Sustainable Resource Management in Luxembourg			4.70	2.97	3.05	4.20	3.04	20.40
MS_New Functional and Intelligent Materials and Surfaces and New Sensing Applications			3.39	4.50	2.85	2.03	6.91	23.06
 BM_Biomedical Sciences/Regulation of Chronic, Degenerative and Infection 	ctious Diseases	3.17	1.94	5.37	2.82	6.57	3.44	23.30
LM_Labour Market, Educational Requirements and Social Protection	SC Societal Challenges	1.03	0.84	2.28	1.75	2.00	2.17	17.05
ID_Identities, Diversity and Integration		1.57	0.66	1.51	1.09	3.99	3.14	17.85
TOTAL		14.04	14.85	19.35	15.34	20.50	20.31	104.42

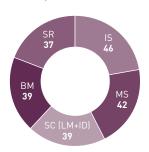
PROJECTS FUNDED/DOMAIN

DOMAIN	2008	2009	2010	2011	2012	2013	Total
■ IS_Innovation in Services	8	10	6	7	8	7	46
SR_Sustainable Resource Management in Luxembourg	6	11	5	5	6	4	37
MS_New Functional and Intelligent Materials and Surfaces and New Sensing Applications	7	8	8	5	4	10	42
■ BM_Biomedical Sciences/Regulation of Chronic, Degenerative and Infect [®] SC_Societal Challenges	7	3	8	5	9	7	39
LM_Labour Market, Educational Requirements and Social Protection	2	2	6	4	0	_	20
ID_Identities, Diversity and Integration	4	2	3	2	. 9	5	39
TOTAL	34	36	36	28	36	33	203

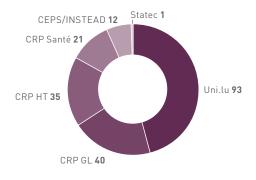
CORE: FUNDING BY DOMAIN, BETWEEN 2008 AND 2013



CORE: PROJECTS BY DOMAIN, BETWEEN 2008 AND 2013



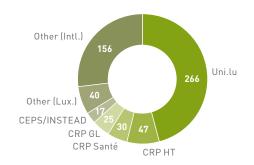
CORE: PROJECTS BY INSTITUTION, BETWEEN 2008 AND 2013



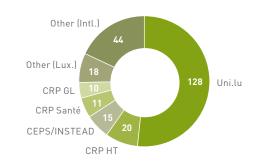
14 15

AFR PHD & POSTDOC GRANTS

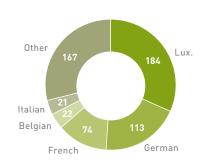
AFR: PHD GRANTS PER HOST INSTITUTION (2008-2013)



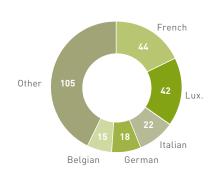
AFR: POSTDOC GRANTS PER HOST INSTITUTION (2008-2013)



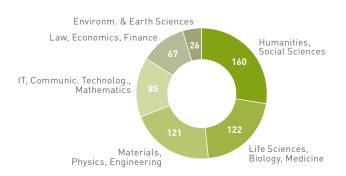
AFR: PHD GRANTS BY NATIONALITY (2008-2013)



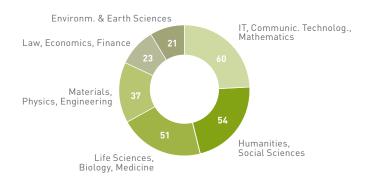
AFR: POSTDOC GRANTS BY NATIONALITY (2008-2013)



AFR: PHD GRANTS BY DOMAIN (2008-2013)

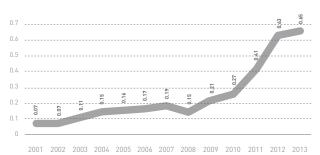


AFR: POSTDOC GRANTS BY DOMAIN (2008-2013)



PSP - PROMOTING SCIENCE TO THE PUBLIC

FUNDING OF AM1 / PSP BETWEEN 2001 AND 2013





JULES HOFFMANN NOBEL LAUREATE SYMPOSIUM: ATTRACTing Future Research Leaders to Luxembourg





On 26 April 2013, the FNR organised the Jules Hoffmann Nobel Laureate Symposium at the Philharmonia in Luxembourg. On the subject of ATTRACTING Future Research Leaders to Luxembourg, this event brought together Professor Iain Mattaj, Director General of the European Molecular Biology Laboratory (EMBL) in Heidelberg, Professor Jules Hoffmann, Research Chair of Integrative Biology and Professor at the Institute of Advanced Studies at the University of Strasbourg and winner of the Nobel Prize of Physiology or Medicine in 2011 and FNR ATTRACT Fellows, with the aim of presenting the scientific and economic interest to attract first-class young researchers to Luxembourg in order to contribute to the development of research in the country.

Excellent young scientists are the supporting pillars of any research community. Therefore Luxembourg must invest into recruiting and retaining these talented individuals. Funding programmes, such as the FNR ATTRACT programme play a key role in this process. Launched in 2006, the programme offers young scientists the opportunity and funds to set up and develop their own research team within a Luxembourg institution. So far, eight fellows from four European countries have participated in the scheme.

No such support measures were in place when Jules Hoffmann graduated from the University of Strasbourg. Although born and bred in Luxembourg, he stayed in Strasbourg and became a Research Director and Professor. He is renowned for his work on the innate defence mechanisms that organisms, from the most primitive up to humans, use against infectious agents such as bacteria and fungi. He received the 2011 Nobel Prize in Physiology and Medicine for this work, together with two other scientists.

"We wanted to organize an event involving our ATTRACT fellows to showcase Luxembourg's young research leaders and their importance for the future of research in the country", explains Dr Frank Glod, Head of Strategic Research Programmes at the FNR. "Combining this with an inspiring lecture by a Luxembourg-born Nobel Laureate was the perfect combination."

Around 300 people attended the symposium at the Philharmonie. The symposium started with the premiere of two films presenting the FNR ATTRACT programme and fellows. Subsequently, Professor Iain Mattaj, Director of the prestigious European Molecular Biology Laboratory in Heidelberg, emphasized the importance of having well-trained young scientists for research in Europe and complimented the excellent collaborations between his laboratory and research institutions in Luxembourg. Professor Jules Hoffmann finished by presenting the research activities that won him his Nobel Prize. During his talk, he also mentioned the good support he had received throughout his career.





The second part of the symposium consisted of a panel discussion on how young researchers help to advance scientific research and economic development in Luxembourg, and what can be done to maintain this momentum and inspire future generations. Participants included Jules Hoffmann, Chairman of the FNR Board Yves Elsen and ATTRACT fellows Dr Phillip Dale, Dr Paul Wilmes, and Dr Ines Thiele.

"It was only the second time that Jules Hoffmann gave a public lecture in Luxembourg and we were really honoured to have him here", comments Frank Glod.

Originally from Luxembourg, Paul Wilmes returned to his home country following post-doctoral research at the University of California, Berkeley. He appreciated the opportunity to share ideas, experiences and results with both the panel and the audience. He hopes that similar events can become a regular occurrence in the future.

He also very much enjoyed meeting Jules Hoffmann: "He is very open and down-to-earth, and hasn't forgotten where he is from." Paul Wilmes thinks that we need role models like Jules Hoffmann. "It's important to show adolescents and aspiring researchers that being a Luxembourger, or doing research in a small country like Luxembourg, is no obstacle to achieving great things. "

For the Symposium, the FNR published a brochure on current ATTRACT Fellows and produced films to introduce ATTRACT Fellows and the fields of research in which they are involved.







www.fnr.lu/films



www.fnr.lu/brochures



AFR NETWORKING DAY



The AFR Networking Day 2013 was dedicated to the careers of young researchers and the promotion of entrepreneurship. During the plenary session, two researcher-entrepreneurs, Christian Jung, a young man from Luxembourg now Investment Manager with the High-Tech Gründerfonds based in Bonn, and Roger Assaker, founder and CEO of e-Xstream Engineering, presented their career paths. In addition, the FNR offered six workshops with training by professionals in entrepreneurship, project management, communication, team work and networking. Some one hundred young researchers, from research institutions in Luxembourg and the Greater Region, responded to the call with great enthusiasm.













SCIENCE FESTIVAL





www. science-festival.lu

















FNR AWARDS 2013



On 25 October 2013, for the fifth time the FNR rewarded persons who have greatly contributed to communication in the field of science and research with the FNR AWARDS.

02











01

• FNR AWARD FOR OUTSTANDING PHD THESIS

01 Christian JUNG (Technische Universität München) Patient-specific Induced Pluripotent Stem-cell Models of Cardiac Disease

• FNR AWARD FOR THE OUTSTANDING PROMOTION OF SCIENCE TO THE PUBLIC

02 Patrice CAIRE/ Grégory NAIN (Interdisciplinary Centre for Security, Reliability and Trust at the University of Luxembourg, SnT)
A Convivial, Private and Secure Home Care Assistant

03 Benoît SMETS (European Center for Geodynamics and Seismology - ECGS), Nicolas D'OREYE (ECGS / Musée National d'Histoire Naturelle - MNHN), François KERVYN (Musée Royal de l'Afrique Centrale) & Adrien OTH (ECGS)

Nyiragongo, expédition sur un lac de lave

• FNR AWARD FOR OUTSTANDING SCIENTIFIC PUBLICATIONS

04 Pascale M. J. ENGEL DE ABREU (University of Luxembourg) Bilingualism Enriches the Poor: Enhanced Cognitive Control in Low-income Minority Children

05

• FNR SPECIAL AWARD

05 Fernand WAGNER, Professor of Physics and Vice-President, President and Honorary President of the "European Association for Astronomy Education"

SIGNATURE ANR



On 19 February 2013, a bilateral cooperation agreement was concluded between the FNR and the Agence Nationale de la Recherche, France (ANR). This Lead Agency agreement, signed by Yves Elsen, Chairman of the Board of the FNR, Pascale Briand, Director General of the ANR, and Marc Schiltz, Secretary General of the FNR, will henceforth simplify the implementation of cross-border research projects. Researchers from Luxembourg public research institutions can now submit cross-border projects with their French colleagues, via the ANR's Programme blanc.

SIGNATURE RCUK



On 30 September 2013, a bilateral cooperation agreement was concluded between the FNR and the Research Councils UK (RCUK). This Lead Agency agreement, signed by Yves Elsen, Chairman of the Board of the FNR, Professor Paul Boyle, Chief Executive of the Economic and Social Research Council (ESRC) and RCUK International Champion, and Marc Schiltz, Secretary General of the FNR, will henceforth simplify the implementation of cross-border research projects. Researchers from Luxembourg public research institutions can now submit cross-border projects with their British colleagues.

OFFICIAL LAUNCH OF THE WEBSITE SCIENCE.LU





Together with its partners, the FNR has launched the brand new website science.lu, a central meeting place for science and the general public in Luxembourg, including children and young people.

Science.lu wants to present science and research in an exciting and surprising way. With informative yet easy and fun contents, science.lu provides information for everyone wanting to find out more about science and research in Luxembourg and, also, in the world: articles about research made in Luxembourg, events for the general public, scientific visits, videos of scientists and their work, experiments to repeat at home, and much more. On science.lu, young people will also find useful information about the many different careers in science and even the little ones will discover science in a playful way, when they go on a scientific discovery tour together with Lizzie and Nouga, the website's little mascots.

The new website is a joint project of numerous scientific actors in Luxembourg, from major national institutions to local initiatives, wishing to make their activities further accessible to the public. Science.lu should contribute to bringing people closer to the activities, findings and results from the world of science. Science.lu therefore also turns explicitly to all science communicators, researchers, teachers etc. with an invitation to become a part of the new website; science.lu offers everyone an opportunity to make their science dissemination projects visible and accessible to the general public.

www.science.lu.



SECOM TAO: A Quality Control System for Assessment Processes by Means of a Collaborative Internet-based Assessment Platform

Imagine you were the boss of a big company that is about to go bankrupt. What would you do? Make some radical decisions? Or first talk to your department heads? Or just sit back and observe the situation for a while? It is difficult to approach a complex problem from the right direction and find the right balance between gathering information and action. Solving complex problems is an increasingly important skill. "School also promotes this skill," says FNR-Attract-Fellow Dr. Samuel Greiff of the Research Unit "Education, Culture, Cognition and Society" (ECCS) of the University of Luxembourg. "And, as with reading or calculating, the learning progress has to be measured, for example in educational assessments like the PISA study." The question is: How can scientifically valid data be acquired for such assessments that paint a realistic picture of the students' problem-solving skills? Under the aegis of Luxembourg, and with funding from the FNR, an interdisciplinary research group has created a platform for this: TAO - Testing Assisté Ordinateur, or Computer-Based Testing. The psychologist Greiff and his team are researching the theoretical bases and developing study designs from them. "Measurability of problem solving skills is a long-standing question in cognitive psychology. We are working intensively in this field and preparing the findings so that they can be used in large-scale studies such as PISA."

CRP Henri Tudor is leading the technical aspects. Dr. Thibaud Latour, Head of the unit "Knowledge-Intensive Systems and Services" sees the challenges that TAO developers were faced with as being on two different levels: "The level the school children interact with is similar to a computer game. The pupils are exposed to a situation in which they have to solve complex problems – similar to the fictional CEO of a bankrupt firm. Beneath this is a second level, on which we record the subject's behaviour, assess it according to defined criteria and thus draw conclusions on how well developed their problem solving skills are. That was the real difficulty we had to overcome."



And they did so very well, as Latour tells: "In some projects, in addition to supporting the quality control of the assessment process, TAO recorded and analysed the student behaviour data to provide test scores. Assessment of collaborative problem solving consists in specific tests that confront the subject with the reactions of other computer-simulated teammates." TAO is not rigid at all, rather it is an open system that can be extended to the ideas of the users for specific tests: The platform is namely an open-source programme, which Latour likens to an industrial production line: "We provide all the tools and work materials in TAO. The user can then put them together and adapt them to a specific problem, by which he obtains the ideal work environment."

TAO's advantages – processing and analysis of complex scenarios with high flexibility – have already made it a success: The platform is now used in around 80 countries for educational studies – including PISA. In 2013, CRP Henri Tudor, along with CITO B.V. (NL) and some individual investors, also launched the spin-off "Open Assessment Technologies" (OAT), which will guarantee the marketing of TAO, since the platform can also be used in companies for selecting applicants. "This brings up another aspect of interest, the measurability of which we are now researching in the context of TAO: capacity for teamwork and cooperation," Samuel Greiff says. "This is highly relevant in companies especially – but is playing an increasingly important role in school education as well."



INTER AAL STIMULATE: Sustainable E2 Mobility **Services for Elderly Persons**

A group of elderly people flies to Malta to spend a week on vacation: Sun, sea, culture, recuperation – all routine in the tourism industry. In 2013, however, a special kind of organized tour took place: It involved scientists of STIMULATE, an EU project under the responsibility of the Luxembourg Public Research Centre Henri Tudor, who tested a new Internet-based platform designed to support and promote the mobility of elderly people. The FNR funded the research project STIMULATE with 572,000 euros.

The coordinator of the collaborative project is Dr. Ing. Djamel Khadraoui. His eyes light up as he speaks of his vision: "We want to use modern information and communication technologies to give seniors the chance to be more active in life. Mobility plays a major role in this – the longer people remain active, travel, meet with friends and experience quality of life, the longer they stay healthy and don't need anyone to look after them. "But how do seniors use ICT? How do they cope with the Internet and smartphones? And what expectations do they have?" These questions need to be investigated before one can develop an Internet-based travel platform for people over 60.

"For our target group, we have naturally adapted the graphical user interface or GUI to make it especially user friendly - even if the user hasn't been surfing the Internet for 20 years" Khadraoui says. "But it is especially important for the actual travel offers to take the needs of the elderly and perhaps even people with reduced mobility into account; from front door to holiday resort and back. "With STIMULATE, the users create a profile in which they describe their needs: Does someone need support on the way to the airport? Does the hotel room need special facilities? What should the maximum walking distance he on excursions?"



Holiday resorts and programmes must accommodate such specific requirements. "Our platform recommends only suitable trips to the customers. This means there have to be scouts on location to assess the hotels and excursion destinations and enter the data into our database," Khadraoui explains. "But we needn't reinvent the wheel. Large tour companies already have established processes and experienced personnel to do just that. And since the elderly form a large and constantly growing customer group, there is much need for portals like STIMULATE, for which the tour operators then provide data and with which they can attract a new customer base." So it is realistic to expect new cooperatives.

The STIMULATE researchers also want the knowledge and experience of their target group to flow directly into the project, and have got together with senior citizens' associations. Khadraoui continues: "Many associations offer tours as a service to their members. The preparation, however, is usually manual – in spreadsheet programmes or on paper. We have aroused great interest with our platform, which offers professional databases and automatic organizational processes at the backend." So it came to the tour to Malta, where the researchers had the opportunity to plan and organize together with the Luxembourgish RBS-Association (Center fir Altersfroën a.s.b.l.) as a pilot project.

Around 200 travellers from Luxembourg thus embarked for Malta. On location, the platform provides continuous assistance and keeps the programme running smoothly. "It can happen that someone is too tired for an excursion the next day," project coordinator Djamel Khadraoui explains. "The group member can tap this into the dedicated mobile application, and STIMULATE will take it into account in the next day's plan." That way, STIMULATE assures both mobility and safety. There is strong demand for this, and STIMULATE will now make its way as a successful business tool" - Khadraoui is sure of it.

INTER MOBILITY Leon van der Torre - A Research Semester in Stanford

Leon van der Torre wants to know how the world will look in a few years and also make a specific contribution to the future. That is, at least, the declared – overriding – objective of his research. His route to this open future takes him through his research fields of deontic logic, logic in security, compliance, agreement technologies, artificial intelligence and cognitive robotics. In particular, however, he looks beyond both the academic and the geographical horizons. For example, the Computer Science Professor at the University of Luxemburg spent a research semester at Stanford University from January to June 2013 – or, to be more precise, at the Center for the Study of Language and Information (CSLI).

Leon van der Torre did not, of course, select the location for his sixmonth stay funded under the FNR INTER Mobility Programme by chance. First of all, the name Stanford is a globally acknowledged quality label in the academic world and, secondly – and above all—the CSLI is an interdisciplinary research centre. The focus of interest there is "research involving computational, logical, and stochastic modeling of cognitive functions and processes", with this interest being shared by, among others, philosophers, linguists, psychologists and mathematicians in addition to computer scientists. The term 'interdisciplinary' is interpreted in the broadest possible sense here, as Leon van der Torre explains, with different modes of thought and approach complementing each other and leading to long-term research results, to a certain extent to the world as it will look in 20 years.

Leon van der Torre is well versed in thinking and working in an interdisciplinary way, with this also forming the fundamental principle of his activity in Luxembourg. Whether it is the Interdisciplinary Lab for Intelligent and Adaptive Systems (ILIAS) or Interdisciplinary Centre for Security, Reliability and Trust (SNT), the first part of the name in both cases refers to a programme. And for good reason, as Leon van der Torre sees it, given that his special subject covers 'Intelligent Systems'. And, in his view, it is not simply a matter of the pure functioning of the same but, rather, also their potential for social interaction – i.e. questions that can be better answered by philosophers or linguists, for example, than by engineers: "Philosophers, for instance, are familiar with theoretical social models, while computer scientists are application-oriented", says Leon van der Torre. Together, this results in an interdisciplinary whole.

And what new insights has his stay at Stanford brought him in this regard? Leon van der Torre answers the question quickly: "mindset" is a keyword here, "pro-activity" another: "in California, things are pressed ahead with in a consistent way, with a spin-off sometimes also being established very quickly, combining pioneering spirit with the entrepreneurial spirit." He sensed this dynamic mindset, characterised by openness, just about everywhere: when working with research colleagues, during seminars that he gave spontaneously due to a colleague not being available and even – together with his family – in everyday life outside the campus: "My wife, who is an artist, was able to cooperate in a project in San Francisco and our two sons were quickly integrated into the state school they attended."

All in all, the entire family were able to take something positive with them – for Leon van der Torre himself also something specific and sustainable, with US colleagues he worked with at Stanford attending a congress with him in Belgium later this year and their involvement also planned for research projects in Luxembourg. Interdisciplinary interaction begins very much – even if the result concerns technology – with the people.









AFR Patrick Augustin – PhD at the Stockholm School of Economics

What is the goal of one's dreams for one person is often only an interim stage at best for someone else, the actual start of a long (research) journey. Patrick Augustin belongs to the latter, with his academic career leading him to Canada – initially. To be more precise, to the renowned Mc Gill University in Montreal.

To put things in order: after completing his Economics and Finance studies in Strasbourg with a Master's degree in 2004, Patrick Augustin immediately found a position as an attaché at the Luxembourg embassy in Stockholm. Diplomatic service, prospects of a public service career, and that immediately after studying – for many, that's the stuff dreams are made of. But Patrick Augustin wanted more. Regardless of the fact that his job at the embassy was for a limited period, it became quite clear to the present 33 year-old that he wanted to explore the world in the best meaning of the word. He did this initially on a part-time basis in his home country, Luxembourg, where he obtained a further Master's degree in Banking and Finance at the Luxembourg School of Finance (LSF) parallel to working in a bank. Because, as Patrick Augustin says: "I wanted to know why financial products are like they are, I wanted to find out what is behind things."

Driven by this thirst for knowledge, the question of his further career planning was also answered quickly at that time. Anyone talking to Patrick Augustin will believe him when he says that the decision to pursue an academic career was an easy one for him. Fun, passion, challenge, curiosity: these are words the man born in Warken in northeast Luxembourg uses frequently when he talks about what he does – and, in doing so, also gets to the heart of the motivation of research in general. So, in 2008 he then moved to Sweden, though instead or working at the embassy this time, he studied for his PhD at the Stockholm School of Economics. Five years were planned for this, with the first four funded by an AFR scholarship from the FNR and the final year via a Swedish grant. At the end of this five-year period, his thesis on the subject "Essays on Sovereign Credit Risk and Credit Default Swap Spreads" was complete and awarded a distinction in 2013 – when his career then took him across the Atlantic.

Patrick Augustin has been an Assistant Professor in Montreal since summer 2013 - at an educational institution whose name - like that of the Stockholm School of Economics – stands for excellence. McGill University is not only the largest English-speaking university in Montreal, it also occupies top positions in all the international rankings. Patrick Augustin thus finds himself, as earlier in Sweden, in the best possible academic company, though other criteria are also important to him: "What especially inspired me to take my next step to Canada was the flexibility of the North American system, the blend of research, teaching and services." In specific terms, this means that Patrick Augustin researches, teaches and carries out practical work for one semester each and organises conferences, for example. In this mix, he sees the possibility of constantly developing further in the coming years and finding his place in the world of international finance. Patrick Augustin does not yet want to commit himself to where this will be. Openness is, after all, an essential part of the spirit of research.

PSP Exploring the Ecology of Texel

Thanks to its extraordinary wildlife and the relative proximity to Luxembourg, Texel, the largest of the Frisian islands in the Wadden Sea, has been a favourite destination for school biology field trips for many years. In 2013, the FNR's PSP grant (Promoting Science to the Public) helped finance the trip for a group of students from the Lycée Hubert Clément in Esch-sur-Alzette (LHCE).

Fifty-five pupils and five teachers spent a week wading through the mud flats (Watt) and walking the seashore, discovering the fauna and flora of saltmarshes and sand dunes and analysing the various adaptations different organisms have developed to survive the weather-beaten and salt-drenched conditions of the littoral zone.

Every morning, the group rode their bikes to a field site and were confronted with a particular scientific problem. After the formulation of hypotheses, the students received the necessary materials to go about confirming (or denying) their theory – through observations, book research, data collection, chemical analysis or a mix of all. Staff from Ecomare, the Centre for Wadden and North Sea on Texel, supported the pupils' regular teachers on some of the outings.

Basic botanical identification skills went hand in hand with more advanced aspects of physiology: which plants of the saltmarshes dilute interior salt concentration through added water intake and which have developed special glands or hairs to excrete excess salt? Which do simply collect it in their leaves, then shed them, and which plants have evolved a life cycle that is completed before the excess salt kills? Why can a plant without such adaptations not survive in the saltmarsh and how can each plant's strategies often be determined purely by observing its morphology? In a similar fashion, students had to determine how beak length and shape correlate with the local bird species' chosen food source.

Jackie Laux, one of the teachers accompanying the group, sees many benefits in such a weeklong field trip: for one, the students learn to perceive their environment in a more conscious manner, to question and not to simply accept things. The trip provides a possibility to practice the scientific approach to a problem – hypothesis, logical analysis, testing – in a hands-on fashion, which is certainly more exciting than cramming theory in the classroom and can also help to make scientific research a somewhat less daunting subject.

A few of the students seem to be hooked. They have joined the Jonk Fuerscher, a group dedicated to the promotion of budding scientists between the ages of 11 and 21, and have commenced work on their very own scientific projects. As with the field trip, there is much learning by doing and it took one group of students a long series of incremental temperature raises to realise that not all enzymes work best at 37.5°C, as most in the human body do. In this specific case, optimum temperature was as high as 70°C.

Although the LHCE-students did raise some money independently through the sale of self-made Christmas calendars and secured donations from the parents' committee and the school's alumni association, the FNR's contribution was essential in covering the greatest part of the travel expenses as well as allowing for the purchase of educational material such as identification guides.

Laux is convinced that field trips are a stronger inspirational force towards scientific research than typical classroom teaching ever can be – as such, they are definitely in line with the PSP-grant's aim. The teacher sees a significant added advantage: field trips provide a social setting in which the students get to bond, develop interpersonal skills and simply have fun as a group.





RESCOM European Data Conference in Luxembourg

Science lives from the spirit of research, i.e. the urge to analyse and the thirst for finding out new things. For a successful work in this sense, however, scientists need not only imagination but, rather, also very concrete, usable data that can ideally be employed across boundaries and disciplines. In line with this interdisciplinary starting position, it was researchers from numerous disciplines and countries who came together in Luxembourg in July 2013 for the three-day European Conference on Data Analysis under the patronage of Jean-Claude Juncker – supported by the FNR with RESCOM funding.

The setting for the conference organized by Dr. Sabine Krolak-Schwerdt, Professor of Psychology at the University of Luxemburg and Dr. Matthias Böhmer - Neumünster Abbey - was a place full of history, and the conference itself was also a milestone in the history of the analysis of research data. Although researchers have been coming together for regular conferences since the 1970s, this was the first time the event had included the attribute "European" in its name. This choice of name was no accident, however, as Sabine Krolak-Schwerdt explained but, rather, the result of ongoing development as well as a standard for the coming years. The reason being that there is a desire to be more pan-European and to also consciously express this, an approach evidently well received among the researchers: "We had far greater interest than in previous years and, thanks to the focus on data analysis, were able to conduct a very intensive exchange of views and ideas at both the theoretical and practical level", said Sabine Krolak-Schwerdt.

The driving forces behind the conference and the data analysis topic are the German Classification Society (GfKl) and its counterpart in the French-speaking world, Société Francophone de Classification (SFC). The specific impact of the conference concerns the development of methods which may commonly be used for the analysis of data stemming from different domains and domain-specific research questions. Accordingly, new developments in the context of the conference were devoted to unifying methodological approaches with the potential to analyse and answer research questions from diverse domains and with various data types. Such developments necessitate the communication among experts in the methodological field from the involved disciplines at an international level. This defined the major aim of the European Conference on Data Analysis, and special emphasis was laid on interdisciplinary research and the interaction between theory and practice.



This interaction was reflected both by the list of speakers as well as by the around 300 attendants from 44 European and Non-European countries that represented all academic areas. In the view of Sabine Krolak-Schwerdt, this variety of participants as well as the resulting diversity of topics was also due, not least of all, to the fact of all the faculties of the University of Luxemburg organising a conference together for the first time - an innovation that, as a direct result of the conference, could soon be followed by another. On account of the need for the further development of models and methods of data analysis also growing constantly over and above the annual conferences, there are currently plans under way with a view to establishing a central European data analysis centre- based in Luxembourg. For a good reason: On the one hand the growing research hot spot offers a high level of the interdisciplinary dynamic needed - on the other hand, there are renowned institutions such as Statec willing to cooperate as partners.

08 FUNDING INSTRUMENTS

FUNDING BY CAREER STAGE

	PhD	Postdoc & Junior Researcher	Established Researcher	Leading Researcher	
PhD and Postdoc grants in Luxembourg and abroad	AFR-PhD Grant	AFR-Postdoc Grant			
Regular project funding with thematic focus		CORE Junior*	col	RE*	
Regular project funding without thematic focus			OPE	EN*	
Grants to establish research groups in Luxembourg		ATTRACT Starting	ATTRACT Consolidator		
Grants to establish research groups in Luxembourg				PEARL	
Funding of bi- or multilateral research projects			INI	ER	
Secondments and research stays in Luxembourg and abroad			INTER M	IOBILITY	
Facilitation of the commercialisation of innovations			PROOF-OF-CONCEPT		
Support for research communication		RESCOM**			
Support for promoting science to the public		PSP			

- In general, collaborative projects with German, Swiss and Austrian partners are possible through funding agreements with e.g. DFG, SNF and FWF; ICT: possible collaboration with Poland; Biomed: possible collaboration with EMBL
- ** The organizer/applicant has to be a public institution or a public body with a research mission in Luxembourg or a non-profit association pursuing activities of a scientific nature in Luxembourg.

FUNDING PROJECTS LED BY ESTABLISHED RESEARCHERS IN LUXEMBOURG

• CORE – Thematically focused to key areas

CORE is the central programme of the FNR. The prime objective of CORE is to raise the scientific quality of Luxembourg's public research by funding high-quality projects in Luxembourg's priority research domains. The CORE programme aims at building a pool of knowledge and expertise as a basis for future application of research results. CORE projects should directly contribute to the strengthening of the capacities of the research groups in their fields of action, leading to the creation of national strategic resources and an increased visibility in the international research community.

www.fnr.lu/core

• OPEN - Thematically open

The OPEN programme intends to provide funding for a limited number of high quality research projects that do not fit into areas covered by the FNR's thematic CORE programme. It aims at supporting established researchers to pursue new and emerging developments in their research fields.

www.fnr.lu/open

• INTER - International cooperation

The INTER programme aims at giving Luxembourg's public research a higher profile in the international context by providing funding for international collaboration. INTER answers the needs of researchers in Luxembourg for the implementation of joint projects between foreign research centres and their own institutions in order to increase their visibility and competitiveness.

www.fnr.lu/inter

• Proof-of-Concept - Thematically open

The Proof-of-Concept Pilot Programme is an effort to bridge the gap between research and early stage of a marketable innovation. By facilitating the successful commercialisation of innovations to society, this initiative is expected to have a positive impact on Luxembourg and the state's economy.

www.fnr.lu/poc

FUNDING PEOPLE AND PROJECTS

• CORE Junior – CORE for starting independent researchers based in Luxembourg

CORE is the central programme of the FNR. The prime objective of CORE is to raise the scientific quality of Luxembourg's public research by funding high-quality projects in Luxembourg's priority research domains. The submission of projects by young researchers is fostered by CORE Junior Track, a dedicated framework for less experienced PIs. www.fnr.lu/core

ATTRACT – Attracting outstanding junior researchers to Luxembourg

Bringing excellent researchers with a high level of expertise in science and technology to Luxembourg is a key mission of the FNR. The ATTRACT programme aims to support the national research institutions in expanding their competences in strategic research areas by attracting outstanding young researchers with high potential to Luxembourg. www.fnr.lu/attract

PEARL – Attracting leading researchers from abroad to Luxembourg

With the PEARL funding programme, the FNR offers Luxembourg institutions a flexible and highly competitive programme to attract established and internationally recognized researchers in strategically important areas: thus, the recruitment of excellent PEARL grantees aims to accelerate the development and strengthening of the national research priorities.

www.fnr.lu/pearl

• INTER Mobility – Mobility scheme for established researchers based in Luxembourg & abroad

The aim of the INTER Mobility Programme is to promote the scientific exchange between research groups of the Luxembourg public research institutions and research groups abroad in order to foster innovative, internationally competitive research and support the exchange of key knowledge and technological know-how.

www.fnr.lu/mobility

FUNDING PEOPLE IN LUXEMBOURG AND ABROAD

• AFR PhD & Postdoc Grants – Thematically open

Through its PhD and Postdoc Grant Scheme AFR (Aides à la Formation-Recherche), the FNR supports research training in Luxembourg and abroad.

www.fnr.lu/afr

FUNDING SCIENCE COMMUNICATION

RESCOM – Co-funding for the organisation of international Scientific Conferences, Exploratory Workshops, Lecture Series and Summer Schools in Luxembourg; Funding for the publication of Scientific Monographs

Through its Support for Research Communication Scheme RESCOM, the FNR supports communication between researchers to promote scientific outcomes. The FNR awards grants for the organisation of outstanding international scientific conferences (conferences, annual and multi-annual meetings and colloquia), exploratory workshops, lecture series and summer schools organised in Luxembourg as well as for the publication of scientific monographs.

www.fnr.lu/rescom

• PSP – Support for Promoting Science to the Public

The objective of the Promoting Science to the Public scheme PSP is to strengthen the exchange between science and society. The programme supports projects that raise public awareness of scientific topics and projects that publicise research being carried out in Luxembourg towards the general public.

www.fnr.lu/psp

DD0 IE0T	DDO IFOT	DDINOIDAL	LIOST	DOMAIN	END CONTRIBUTION
PROJECT ACRONYM	PROJECT TITLE	PRINCIPAL INVESTIGATOR	HOST INSTITUTION	DOMAIN	FNR CONTRIBUTION IN EUR
● SeMIGod	SpEctrum Management and Interference mitiGation in cognitive raDio satellite networks	Bjorn Ottersten	SnT (University of Luxembourg)	IS - Telecom- munication and Multimedia	693,000
• ADT2P	Attack-Defense Trees: Theory Meets Practice	Sjouke Mauw	SnT (University of Luxembourg)	IS - Information Security and Trust Management	494,000
● MAMBA	MultimodAl MoBility Assistance	Thomas Engel	SnT (University of Luxembourg)	IS - Telecom- munication and Multimedia	595,000
• BRAIDS	Boosting Security and Efficiency in Recommender Systems	Qiang Tang	SnT (University of Luxembourg)	IS - Information Security and Trust Management	429,000
• RISK	The relation between Listed Firms' Risk Reporting and Accounting Conservatism – Evidence from Selected Countries in Europe	Anke Müßig	University of Luxembourg	IS - Development and Performance of the Financial Systems	264,000
AndroMap	Static Analysis For Android Secu- rity: Building the Map of Android Inter-Application Communication	Jacques Klein	SnT (University of Luxembourg)	IS - Information Security and Trust Management	494,000
• Locale	Localised Legacies	Thomas Tamisier	CRP Gabriel Lippmann	IS - Telecom- munication and Multimedia	815,000
• CANCAN	A Multidisciplinary Approach to Understand the Molecular Basis of the Heterogeneous Cell Wall Composition in Hemp Stems	Jean-François Hausman	CRP Gabriel Lippmann	SR - Sustainable Management and Valorization of Bioresources	1,041,000
• VALUES	VALUing Ecosystem Services for environmental assessment	Benedetto Rugani	CRP Henri Tudor	SR - Sustainable Management and Valorization of Bioresources	683,000
• OASIS	Optimization Based Integrated Process Modelling-LCA: Application to Potable Water Production	Enrico Benetto	CRP Henri Tudor	SR - Water Resources under Change	696,000
• PLANTSENS	Nanoparticle Toxicity – The Role of Surface Properties and Released Ions for Uptake and Effects Detection of Plant Stress Using Advanced Thermal and Spectral Remote Sensing Techniques for Improved Crop Management	Martin Schlerf	CRP Gabriel Lippmann	SR - Water Resources under Change	617,000
• S-MOD PV	Stress-modulated Bulk Photovoltaic Effect in Polar Oxide Ceramics	Torsten Granzow	CRP Gabriel Lippmann	MS - New Func- tional and Intel- ligent Materials and Surfaces	573,000
• ODD	Optical Detection of Deep Defects in Chalcopyrite Semiconductors	Susanne Siebentritt	University of Luxembourg	MS - New Func- tional and Intel- ligent Materials and Surfaces	717,000
• EATSS	Earth Abundant Ternary Semiconductor for thin film Solar	Phillip Dale	University of Luxembourg	MS - New Func- tional and Intel- ligent Materials and Surfaces	561,000
● HABaC	Hybrid Anti-Bacterial Coating	David Ruch	CRP Henri Tudor	MS - New Func- tional and Intel- ligent Materials and Surfaces	984,000
• LowZ-PIES	High-sensitivity High-resolution Mapping of Low Z Elements by Parallel Ion Electron Spectrometry	Tom Wirtz	CRP Gabriel Lippmann	MS - New Func- tional and Intel- ligent Materials and Surfaces	425,000

PROJECT ACRONYM	PROJECT TITLE	PRINCIPAL INVESTIGATOR	HOST INSTITUTION	DOMAIN	FNR CONTRIBUTION IN EUF
● EcoBlend	New Approach of Polymer Reactive Compatibilization: Use of Chemically Modified Cellulosic Nanofillers as Compatibi- lizers for Immiscible PLA/ABS Blends	Fatima Hassouna	CRP Henri Tudor	MS - New Func- tional and Intel- ligent Materials and Surfaces	765,000
● EnergyCell	Spray Deposition of Polyelectrolyte- polyelectrolyte and /or Polyelectrolyte- nanoparticle Complexes for the Design of Durable Fuel Cell Electrodes	Marc Michel	CRP Henri Tudor	MS - New Func- tional and Intel- ligent Materials and Surfaces	1,017,000
● DuraPLA	Mechanical Recycling of Polylactide: Evaluation of Recycling-induced Degradation Mechanisms and of the Resulting Deforma- tion Mechanisms for New Applications	Frédéric Addiego	CRP Henri Tudor	MS - New Func- tional and Intel- ligent Materials and Surfaces	826,000
● PLASMONWIRE	Atmospheric Pressure PLASMA Deposition of PLASMONIC Coatings ON a WIRE Substrate	Patrick Choquet	CRP Gabriel Lippmann	MS - New Func- tional and Intel- ligent Materials and Surfaces	652,000
● POLARIS4FF	Equilibrium and Dynamic Spin Structure of Magnetic Liquids	Andreas Michels	University of Luxembourg	MS - New Func- tional and Intel- ligent Materials and Surfaces	389,000
● GenPhen	Identifying Molecular Intervention Points as Therapeutic Targets for Disease	Carole Linster	University of Luxembourg	BM - Transla- tional Biomedical Research	373,000
PlaCellRep	Platform to Design New Strategies for Cellular Reprogramming in Regenerative Medicine	Antonio del Sol Mesa	University of Luxembourg	BM - Regenerative Medicine in Age- related Diseases	517,000
● THActivity	Modulation of Tyrosine Hydroxylase Activity to Control Catecholamine Synthesis and its Effect on Cellular Metabolism	Karsten Hiller	University of Luxembourg	BM - Regenerative Medicine in Age-related Diseases	584,000
● OligoDopaCo	Utilization of Human Parkinson's Disease Specific Neuroepithelial Stem Cells to Define Disease Associated Cellular Phenotypes in a Co-culture of Oligodendrocytes and Dopaminergic Neurons	Jens Christian Schwamborn	University of Luxembourg	BM - Regenerative Medicine in Age-related Diseases	632,000
• ExPDIENT	Exploring Parkinson's Disease Inhibitor Efficacy on a Non-dopaminergic Target	Enrico Glaab	University of Luxembourg	BM - Translational Biomedical Research	359,000
• FidelCheck	Investigation of the Regulatory Pathways that Govern Fidelity of Cell Division and Tumorigenesis through Aneuploidy	Maria Koffa	University of Luxembourg	BM - Translational Biomedical Research	597,000
• DIQUA-LUX	The Assessment of Diet Quality of the General Population in Luxembourg and its Association with Cardiometabolic Risk	Ala'a Alkerwi	CRP-Santé	BM - Public Health	382,000
● FAMOSO-2	Fabricating Modern Societies: Industries of Reform as Educational Responses to Societal Challenges (ca. 1880-1930) – Part 2	Karin Priem	University of Luxembourg	SC - Education and Learning	817,000
● P0LILux	A Preschool Oral Language Intervention Program for Portuguese Language Minority Children in Luxembourg	Pascale Engel de Abreu	University of Luxembourg	SC - Education and Learning	910,000
• STAR	Sociolinguistic Trajectories and Repertoires: Luso-Luxo-African Identifications, Interactions and Imaginations	Kasper Juffermans	University of Luxembourg	SC - Identities, Diversity and Interaction	259,000
● SIMDECO	Tax-benefit Systems, Employment Structures and Cross-country Differences in Income Inequality in Europe: a Micro-simulation Approach	Philippe Van Kerm	CEPS/INSTEAD	SC - Social and Economic Cohesion	676,000
• UNEMPLOY- NORM	Unemployment Normalization	Claude Houssemand	University of Luxembourg	SC - Social and Economic Cohesion	477,000
TOTAL					20,313,000

OPEN 2013				
PROJECT ACRONYM	PROJECT TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION IN EUR
• CJCL	Prevention and Settlement of Conflicts of Exercise of Jurisdiction in Criminal Law	Katalin Ligeti	University of Luxembourg	500,000
• QUANTMOD	Quantization of Moduli Spaces	Martin Schlichenmaier	University of Luxembourg	500,000
TOTAL				1,000,000

For a detailed summary of each project as well as other information, please refer to www.fnr.lu/open

ATTRACT 2013				
PROJECT ACRONYM	PROJECT TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION IN EUR
Nano-pH	Nano Nano Electronics for pH Control and Ultra-dense Electrochemical Synthesis	C. Pascual Garcia	CRP Gabriel Lippmann	1,500,000
TOTAL				1,500,000

For a detailed summary of each project as well as other information, please refer to www.fnr.lu/attract

PROJECT TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION IN EUR
Coupling in Multifunctional Ferroic Materials	Jens Kreisel	CRP Gabriel Lippmann	5,000,000
Comprehensive Assess- ment of Endophenotypes in Neurodegenerative Diseases - Translating Impaired Molecular Signalling Pathways into Novel Therapeutic Strate- gies for Parkinson's Disease	Reiko Krüger	University of Luxembourg	5,000,000
	Coupling in Multifunctional Ferroic Materials Comprehensive Assess- ment of Endophenotypes in Neurodegenerative Diseases - Translating Impaired Molecular Signalling Pathways into Novel Therapeutic Strate-	Coupling in Multifunctional Jens Kreisel Ferroic Materials Comprehensive Assess- Reiko Krüger ment of Endophenotypes in Neurodegenerative Diseases - Translating Impaired Molecular Signalling Pathways into Novel Therapeutic Strate-	Coupling in Multifunctional Jens Kreisel CRP Gabriel Lippmann Ferroic Materials Comprehensive Assess- Reiko Krüger University of Luxembourg ment of Endophenotypes in Neurodegenerative Diseases - Translating Impaired Molecular Signalling Pathways into Novel Therapeutic Strate-

For a detailed summary of each project as well as other information, please refer to www.fnr.lu/pearl

POC 2013				
PROJECT ACRONYM	PROJECT TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION IN EUR
• FIELDSPEC	Proof-of-concept Pilot Project on a Portable Mass Spectrometer for High Frequency Measurements of d2H and d180 Ratios in H and d15N and d180 Ratios in Dissolved N03	Laurent Pfister	CRP Gabriel Lippmann	1,141,000
MycromeDX	Blood-borne Microbiome- derived RNA Biomarkers	Paul Wilmes	University of Luxembourg	445,000
TOTAL				1,586,000

For a detailed summary of each project as well as other information, please refer to www.fnr.lu/poc

RESCOM - FUNDING INTERNATIONAL SCIENTIFIC CONFERENCES 2013					
TITLE	APPLICANT	INSTITUTION	DATE		
Thermae in Context - The Roman Bath in Town and in Life	Heike Pösche	Centre National de Recherche Archéologique	21.02.13-24.02.13		
ICST 2013 - Sixth IEEE International Conference on Software Testing, Verification and Validation	Yves Le Traon	University of Luxembourg	18.03.13-22.03.13		
European Conference on Data Analysis	Sabine Krolak-Schwerdt	University of Luxembourg	10.07.13-12.07.13		
● 18 th ETSF Conference on Electronic Excitations	Ludger Wirtz	University of Luxembourg	01.10.13-04.10.13		
• Annual Congress of the European Society for Translational Medicine	Anna Chiotti	CRP-Santé	14.10.13-16.10.13		
2 nd International Systems Biology Symposium Luxembourg	Rudi Balling	University of Luxembourg	20.10.13-21.10.13		
MultiPluriTrans - Emerging Fields in Educational Ethnography	Michael-Sebastian Honig	University of Luxembourg	21.11.13-23.11.13		

INTER 2013					
PROGRAMME / FOREIGN FUNDING AGENCY	ACRONYM	TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION
• ORGANIC	COBRA	Coordinating Organic plant BReeding Activities for DIVErsity	Danièle Evers	CRP Gabriel Lippmann	205,000
• CNRS	SMART_ BOUNDARY	Projet de coopération Automates cellulaires pour la simulation de la croissance urbaine et des mobilités transfrontalières	Olivier Klein	CEPS/INSTEAD	625,000
• DFG	AGGLO	Nanoparticle Agglomeration and Assembly in Confined Spaces	Tanja Schilling	University of Luxembourg	173,000
• DFG	COMFGREP	Computational Aspects of Modular Forms and p-adic Galois Representations	Gabor Wiese	University of Luxembourg	311,000
● DFG	SANS_MicMag2	Experimental SANS studies and Micromagnetic Simulations of Neutron Scattering on Poly- crystalline Magnetic Materials	Andreas Michels	University of Luxembourg	206,000
• SNF	Cross Water	Transboundary Micropollution Regulation in Europe: The Definition of Appropriate Management Scales - An Interdisciplinary Approach	Christophe Sohn	CEPS/INSTEAD	643,000
• CHIST-ERA	eGlasses	The Interactive Eyeglasses for Mobile, Perceptual Computing	Thomas Engel	University of Luxembourg	249,000
• M-ERA.NET	MC2	Multi-scale Computational- driven Design of Novel Hard Nanostructured Coatings	David Duday	CRP Gabriel Lippmann	323,000
• ANR	DyPLCA	Environmental assessment of Dynamic Processes – consider- ing time dependency in Life Cycle Assessment method	Enrico Benetto	CRP Henri Tudor	823,000
• ANR	NANOTMD	Electric transport and super- conductivity in Transition Metal Dichalcogenides nanolayers	Ludger Wirtz	University of Luxembourg	278,000
• AAL	SPONSOR	Knowledge and competence exchange SOlutioN for Supporting occupation in the life of OldeR adults	Djamel Khadraoui	CRP Henri Tudor	617,592
• POLLUX	GOLIATH	Goal Oriented Layered system for Inter-operable Activities of THings	Benjamin Gâteau	CRP Henri Tudor	211,000
• POLLUX	IDSECOM	ID-based SEcure COMmunications system for unified access in IoT	Thomas Engel	University of Luxembourg	331,000
• POLLUX	ISh0P	Internet Shopping Optimization Project	Pascal Bouvry	University of Luxembourg	445,000

INTER 2013					
PROGRAMME / FOREIGN FUNDING AGENCY	ACRONYM	TITLE	PROJECT LEADER	HOST INSTITUTION	FNR CONTRIBUTION IN EUR
• JPND	COURAGE-PD	COmprehensive Unbiased Risk factor Assessment for Genetics and Environment in Parkinson's Disease	Rudi Balling	University of Luxembourg	346,000
• SNF	SMASHING	Social Media and Innovation	Pierre-Jean Barlatier	CRP Henri Tudor	347,000
• FWO	CADWALL	The Cell Wall and the Apoplast as a Primary Defence Strategy in Plants Exposed to Cadmium	Jean-François Hausman	CRP Gabriel Lippmann	672,000
• FW0	Stochastic Thermodynamics	Stochastic Thermodynamics	Massimiliano Esposito	University of Luxembourg	171,000
● BMBF	Melanoma- Sensitivity	Predicting Individual Sensitivity of Malignant Melanoma to Combination Therapies by Statistical and Network Modeling on Innovative 3D Organotypic Screening Models	Thomas Sauter	University of Luxembourg	284,000
• BMBF	MitoPD	Mitochondrial Endophenotypes of PD	Rudi Balling	University of Luxembourg	390,000
TOTAL					7,650,592

For a detailed summary of each project as well as other information, please refer to www.fnr.lu/inter



09 INTERNATIONAL COLLABORATIONS

In the globalised world of R&D, it is more than crucial to know the state of the art in terms of international research policy. Therefore, the FNR takes its responsibility as an agency that relies on close collaboration with foreign experts on the subject. Hence, apart from the INTER programme, the FNR is a member of various international networks:

- the association of European Research Funding Organisations and Research Performing Organisations (Science Europe),
- the European Heads of Research Councils (EUROHORCs),
- the European Science Foundation (ESF),
- the International Council for Science (ICSU)

Funding for networking activities is provided through participation in several international schemes:

- the European Cooperation in Science and Technology (COST)
- the European Research Consortium for Informatics and Mathematics (ERCIM)
- the ESF Research Networking Programme

The FNR does also participate in 11 European Research Area Networks: ERA-Age 2, ERASysBio, MATERA, HERA, NEURON, MANUNET, CORE ORGANIC, TRANSCAN, CHIST-ERA, ECO-INNOVERA and M-ERA.NET.

In order to improve INTER's impact, the FNR has signed bilateral agreements with the United Kingdom (RCUK-Research Councils UK), Belgium (BELSPO-Belgian Science Policy and FWO-Research Foundation Flanders), France (CNRS-French National Centre for Scientific Research and ANR-National Research Agency), Germany (DFG-German Research Foundation & BMBF-Federal Ministry of Education and Research), Switzerland (SNF-Swiss National Science Foundation), Poland (NCBR-National Centre for Research and Development) and Austria (FWF-Austrian Science Fund).

The FNR does also facilitate Luxembourg participation in several international multilateral funding schemes: Ambient Assisted Living (AAL) Joint Programme, European & Developing Countries Clinical Trials Partnership (EDCTP), EUROCORES Scheme of the European Science Foundation (ESF), European Collaborative Research Projects ECRP (ESF), Materials World Network (MWN) - NSF MATERIALS, Catalyzing New International Collaborations (CNIC) with the NSF, Joint Programming of Neurodegenerative Diseases (JPND) and ICC Chemistry NSF.

10 SURVEY OF THE PERCEPTION OF RESEARCH

At the end of 2013, the FNR completed the $3^{\rm rd}$ Survey of Awareness and Perception of Research with 500 respondents representing the Luxembourg population (earlier surveys were conducted in 2007 and 2011).

Approximately 43% of the population said that they were interested in science and research in Luxembourg. The general level of information on science and research in Luxembourg is up slightly: 10.1% of the population consider themselves well informed and 25.6% fell satisfactorily informed. As a result, the demand for better information remains high among 62% of the population, who would like above all to obtain more information on the aims of research and its practical applications, or on the impact of research.

66% of the population think that Luxembourg should invest more in scientific research. This is down slightly on 2011 [69.3%]. Similarly, 75% think that even a small country like Luxembourg must be involved in scientific research, whilst in 2011 78% were of that opinion.

The answers to these questions and several other confirmations, in particular including the high level of common knowledge of FNR public actions such as the Science Festival, Mr Science and science.lu (known on average by more than one half of respondents), suggest that collective awareness of research is growing among the Luxembourg population. At the same time, the marks given for the positive consequences of scientific research for Luxembourg were almost all down slightly on the 2011 results. So efforts must be maintained to communicate to the population and, above all, to illustrate the impact of research for Luxembourg in a better way.

11 PUBLICATIONS







Corporate Brochure





Promoting Scientific Culture Brochure













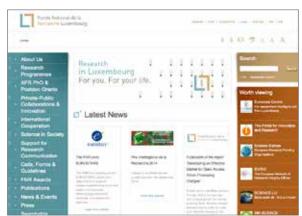


Programmes Brochure



FNR Newsletter





www.fnr.lu



ATTRACT Research Projects



ATTRACT Funding



FNR ATTRACT Fellows in Biomedicine



FNR ATTRACT Fellows in Materials Sciences



FNR ATTRACT Fellows in Education and Literature/Humanities





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12 ORGANISATION

The National Research Fund (FNR) is a public body with scientific, financial and administrative autonomy.

The FNR is headed by a Board and a Secretary General, with a Scientific Council as advisory body. The Secretary General is the executive head of the FNR. He manages the running activities in accordance with the strategy and guidelines decided by the Board. He directs the Executive Agency of the FNR. The Board has the overall responsibility and sets the strategic priorities of the FNR. The Scientific Council advises the Board on all scientific questions. It prepares and supervises the scientific evaluation process.

THE BOARD

The Board consists of:

- a member nominated by each of the Ministers concerned, whose areas of responsibility cover scientific research and applied research, higher education, industrial research and development, technology transfer or the budget,
- two members nominated by the Government Council after consultation with the other Ministers organising R&D,
- six members nominated by the Government from among figures in the private sector recognised for their competence in the field of R&D.

MEMBERS OF THE BOARD

Chairman

• Yves ELSEN, Hitec Luxembourg S.A.

Vice-Chairman:

- Jacques LANNERS, Ceratizit
- Jean BERGH, former General Director of Goodyear S.A.
- Andrée BILLON, Commission de Surveillance du Secteur Financier
- Edmond DIFFERDING, Differding Consulting, former Head Chemistry, UCB Pharma S.A., Bruxelles
- Jerry LENERT, Ministry of Higher Education and Research
- Fränk GANSEN, Ministry of Health (until May 2013)
- Jean-Marie HAENSEL, Inspection générale des finances
- Christiane HOFFMANN, Lilith Projet s.a r.l.
- Robert KERGER, Ministry of Higher Education and Research
- Mike SCHWEBAG, Ministry of Health (from May 2013)
- Marc SOLVI, Paul Wurth S.A.
- Marco WALENTINY, Ministry of Economy and Foreign Trade



Minister Claude MEISCH, Secretary of State André BAULER and the ministerial delegation, with members of the FNR's Board and Scientific Council and with the Secretary General of the FNR in January 2014

THE SCIENTIFIC COUNCIL

The Scientific Council assists the Board as a consultative body on scientific matters.

The Scientific Council consists of:

- a representative of each public research centre (CRP Henri Tudor, CRP Gabriel Lippmann, CRP-Santé),
- a representative of the Centre d'Etudes de Populations, de Pauvreté et de Politiques Socio-Economiques (CEPS/INSTEAD),
- two representatives of the University of Luxembourg,
- figures external to the bodies mentioned above, whether from Luxembourg or abroad, selected on the basis of their competence.

Their number exceeds that of the bodies listed by one.

MEMBERS OF THE SCIENTIFIC COUNCIL

Chairman:

- François MEYER, former General Manager of Centelion SAS and R&D Aventis France
- Lucienne BLESSING, University of Luxembourg (until October 2013)
- Patrick BOUSCH, CEPS/INSTEAD (from January 2013)
- Jacques BROSIUS, CEPS/INSTEAD (until January 2013)
- Pierre FLENER, Uppsala University, Sweden
- Yves FROMES, University Pierre et Marie Curie, Institute of Myology, Paris
- Marc LEMMER, Public Research Centre Henri Tudor
- Franck LEPREVOST, University of Luxembourg
- Aline MULLER, University of Liège, HEC Management School
- Ludwig NEYSES, University of Luxembourg (from October 2013)
- Fernand REINIG, Public Research Centre Gabriel Lippmann
- François SCHNEIDER, Public Research Centre Santé
- Aloyse SCHOOS, IEE S.A.
- Antoine WEIS, University of Fribourg, Switzerland





















































MEMBERS OF THE EXECUTIVE AGENCY

Florencia BALBASTRO, Programme Manager (2) Jean-Paul BERTEMES, Science Communicator (3) Dr Helena BURG, Programme Manager (4)

Dr Marc SCHILTZ, Secretary General, Executive Head of the FNR (1)

Angelina CLEMENS, Administrative Assistant (5)

Dr Olga DE BRITO, Programme Manager (6)

Dr Carlo DUPREL, Head of Unit - Programme Development;

Head of International Relations (7)

Frank GLOD, PhD, Head of Unit - Strategic Research Programmes (8)

Sylvie HEINISCH, Senior Administrative Assistant [9]

Tom JAKOBS, Administrative Assistant (10)

Michèle JENTGES -GLESENER, Head of Corporate Communication (11)

Christiane KAELL, Head of Unit - Thematic Research Programmes (12) Ulrike KOHL, Head of Unit - AFR PhD and Postdoc Grants (13)

Yi LIN, Administrative Assistant (14)

Marie-Claude MARX, PhD, Programme Manager (15)

Dr Andreea MONNAT, Head of Unit - Programme Development [16]

Jill MOUSEL, Administrative Assistant (17)

Ionut PERES, IT Manager (18)

Susana PINTO, Finance & Quality Assistant (19)

Sonia RAMOS, Communication Manager (20)

Susanne RICK, Programme Manager (21)

Marc ROCK, Head of Finance (22)

Joseph RODESCH, Science Communicator (23)

Asaël ROUBY, Programme Manager; Legal Advisor & Research

Integrity Officer (24)

Anne SCHROEDER-VAN DEN BULCKE,

Head of Unit - Science in Society (25)

Josiane STAUS, Administrative Assistant (26)

13 BALANCE SHEET AND PROFIT AND LOSS ACCOUNT

The accounts have been audited by KPMG Luxembourg S.à r.l., Cabinet de révision agréé, and approved by the Board on 14 March 2014. Only the original French version of the annual accounts and the audit opion is binding. For the complete annual report (in French), please refer to www.fnr.lu/annualreports

BALANCE SHEET

31 December 2013 (expressed in kEUR)

ASSETS	2013	2012
FIXED ASSETS		
Intangible fixed assets	445.95	571.89
Tangible fixed assets	76.67	52.89
CURRENT ASSETS		
Budgetary allocations to be received	82,936.06	81,349.33
Other receivables	262.49	393.78
Cash at bank	61,272.74	58,146.30
DEFERRED CHARGES	47.20	30.45
TOTAL ASSETS	145,041.11	140,544.64
LIABILITIES	2013	2012
CAPITAL AND RESERVES		
• Reserves	3,928.92	3,929.65
Result for the financial year	1.15	(0.74)
CREDITORS		
Amounts owed to credit institutions	-	8.07
Trade payables	219.27	346.69
Taxes and social security debts	75.48	68.06
Amounts owed to beneficiaries	140,301.57	107,399.60
Other debts	140.57	211.72
DEFERRED INCOME	374.15	28,581.59
TOTAL LIABILITIES	145,041.11	140,544.64

PROFIT AND LOSS ACCOUNT

31 December 2013 (expressed in kEUR)

CHARGES	2013	2012
Commitments made	77,935.63	47,420.88
Operating costs (including staff costs)	4,883.86	4,470.39
Value adjustments on fixed assets	255.79	74.33
Interest payable and similar charges	0.57	0.24
Extraordinary charges	0.78	-
Profit for the financial year	1.15	-
TOTAL CHARGES	83,077.78	51,965.84
INCOME	2013	2012
Budgetary allocation	82,760.09	51,479.55
Other operating income	132.15	103.79
Interest receivable and similar income	185.54	381.76
Loss for the financial year	-	0.74
TOTAL INCOME	83,077.78	51,965.84

For the text:

Fonds National de la Recherche Liza Glesener (26), Dirk Hans (24, 25 & 27), Hannes Schlender (22, 23) Michèle Weber (16)

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For further information, please visit our website www.fnr.lu or send an e-mail to info@fnr.lu.

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