

2011
ANNUAL REPORT
FOR NEXT GENERATION HEALTHCARE



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MESSAGE FROM THE PRESIDENT AND THE CEO

As the President and CEO of IBBL (Integrated BioBank of Luxembourg), we are pleased to present this first public annual report of IBBL. In June 2008, the Government of Luxembourg announced a bold new initiative to stimulate health sciences and technologies in Luxembourg with goals of strengthening biomedical research, enhancing innovation in healthcare, and stimulating economic development in biotechnology.

ROBERT A. PHILLIPS
CEO



JEAN-CLAUDE SCHMIT
President

Because cutting edge medical research requires high quality tissue samples from patients with various diseases, the creation of a biobank constituted a key infrastructure platform for this initiative. However, as indicated by the word 'integrated', the government envisaged IBBL as much more than a traditional biobank; it would also provide sophisticated processes for preparing and analysing tissues and other samples as required, conduct research to improve the quality of stored material, and serve as a catalyst for attracting new investment and biotechnology companies to Luxembourg. To provide critical help during its start-up phase, the IBBL signed a partnership agreement with an excellent research centre in the United States, Translational Genomics Research Institute (TGen).

IBBL opened its facilities on 25th February 2010 in a gala ceremony including the research community, key staff from TGen, the three supporting Ministries – Higher Education and Research, Health, and Economy and Foreign Trade – and members of the public. Following the opening of the building, IBBL initiated the purchase of specialised equipment, hired highly experienced staff, and began developing the processes for becoming a certified and accredited biobank.

In September 2010, the IBBL Board approved a strategic plan that outlined the steps to achieve the goals outlined above. IBBL would focus on building infrastructure to support four priority research programs in personalised medicine – cancer, type 2 diabetes, Parkinson’s disease, and a population cohort. Research in personalised medicine requires large multidisciplinary teams of clinicians, laboratory scientists, computer experts and engineers. To ensure coordination of these four programs, the leaders of the key institutions in Luxembourg, IBBL, CRP-Santé, and the Luxembourg Center for Systems Biomedicine (LCSB) at the University agreed to collaborate by forming the Personalised Medicine Consortium (PMC).

During 2010 and 2011, the PMC research teams formed, developed their research plans, and the IBBL assisted them to make submissions for ethical approval for the collection of the necessary biological specimens. At the same time IBBL created all of the processes required to ensure the privacy and confidentiality of the information collected from tissue donors. IBBL also signed agreements with all of the hospitals in Luxembourg to provide biospecimens for the research projects.

Partnership is a way of life in Luxembourg and essential for IBBL. IBBL still has a long path to travel to reach all of its major goals, but the past two years have seen much progress and initial successes in collecting samples and attracting business to Luxembourg. IBBL can only succeed with the active support of many partners, especially CRP-Santé, LCSB and the Laboratoire National de Santé. The generous support of the Ministry of Higher Education and Research has also been essential for the success of this initiative.

Finally, we want to thank all of the dedicated staff at IBBL for their creative input and hard work in getting IBBL launched on this important and exciting journey.

Jean-Claude Schmit
President

Robert A. Phillips
CEO

IBBL AT A GLANCE

IBBL was created in 2008 as part of the government's 'Luxembourg Health Sciences and Technologies Action Plan' to be an independent, not-for-profit, biobanking and biotechnology foundation to catalyse partnerships and support biomedical research, establish Luxembourg as a centre of excellence in the biobanking field and accelerate the introduction of personalised healthcare for the benefit of the people of Luxembourg.



In the last two years, IBBL has built an integrated infrastructure to collect, store and process biospecimens and associated data, which are made available under strict observation of ethical standards to research organisations investigating human diseases. IBBL also aids researchers in analysis and provides technologies and biospecimen research to support successful biomedical research in Luxembourg and beyond through the Personalised Medicine Consortium (PMC). In addition, IBBL is involved in various educational and public outreach activities such as the organisation of the University Certificate on biobanking or the participation at national events like the Science Festival.

2000

Lisbon strategy

2007

'Luxembourg
Health Sciences
and Technologies
Action Plan'

2009

October

IBBL building opens
5 members of IBBL staff move in
Start collecting lung cancer samples

2008

Creation of Luxembourg Centre for Systems Biomedicine (LCSB), Integrated BioBank of Luxembourg (IBBL) and Lung Cancer Project in partnership with Institute for Systems Biology (ISB), Translational Genomics Research Institute (TGen) and Partnership for Personalized Medicine (PPM)



2010

February

Official opening of IBBL
IBBL counts 8 members of staff

July

Arrival of Robert A. Phillips, CEO

December

IBBL counts 20 members of staff

2011

January

First meeting of the Personalised Medicine Consortium (PMC)

February

Organisation of First Lung Cancer Conference

March

Participation and workshop at 'Relay for Life'

April

Organisation of Science Club at IBBL

May

Launch of Certificate on Principles of Biobanking at University of Luxembourg

September

Diabetes workshop

20,000 sample derivatives collected from more than 500 donors

November

Organisation of first PMC retreat

Launch of first two IBBL-ISBER Proficiency Testing Schemes

Workshop at Science Festival

Collection hits 25,000 sample derivatives

December

Co-hosting of European Personalised Medicine (EPEMED) Conference

IBBL counts 29 members of staff

IBBL, YOUR PARTNER IN BIOMEDICAL RESEARCH

Since its opening in February 2010, IBBL has pursued the development of operational research support infrastructure covering all stages from collection, to processing, quality control, storage and shipment of biospecimens. It has established agreements with hospitals in Luxembourg and set up collaborations with Clinique St Luc in Brussels and a Pathology Department in Thionville to extend their sample collection.

But IBBL is more than just a collection and storage facility: it also performs sample analysis and acts as a research service and informatics platform, offering access to high quality samples, validated reference material, genomic and population-genetic data, cutting-edge technologies and molecular resources which are essential for research institutions. In May 2011, in partnership with the University of Luxembourg, IBBL also launched the University Certificate on Principles of Biobanking, a unique integrated biobanking course, with 13 attendees.

Biospecimen Collection

IBBL primarily organises the collection of biospecimens from human donors based on the targeted needs of individual research projects, but potentially also to supply other research. Biospecimens can be any kind of tissue or body fluid donated by an individual, including tumour tissue or healthy surrounding tissue, serum, blood, plasma, urine, faeces, saliva, all of which are processed and subdivided into individual samples and sample derivatives (tubes or aliquots) upon arrival at the biobank. IBBL maintains a high level of quality and ethical standards by obtaining ethics board approval for studies, assisting with study design and ensuring appropriate donor consent, by designing collection kits and organising transport, as well as using IBBL's in-house pathologists and assistants for collection and processing. By the end of 2011, a total of 2,250 samples originating from more than 700 donors were collected by IBBL at the Centre Hospitalier Luxembourg (CHL) and Clinique Zitha as well as the Clinique St Luc in Brussels and a Pathology Department in Thionville. These samples gave rise to more than 27,000 sample derivatives stored at IBBL.

LAURENT ANTUNES

Chief Clinical Department/Pathologist

Biospecimen and Sample Storage

As a biorepository (sample storage site), IBBL ensures that samples are stored and maintained to the highest quality. Biospecimen custodianship begins at the moment of collection: two IBBL technicians design and produce collection kits, and organise sample and kit shipping. At IBBL, samples are currently stored in three -80°C freezers and two liquid nitrogen tanks which can hold up to 50,000 sample derivatives. In 2011, a backup diesel generator power supply was installed and tested to ensure the safety of critical samples.



ESTELLE HENRY & KATY BEAUMONT
Biorepository/Biorefinery Technicians



KATE SOKOLOWSKA
Laboratory Maintenance Technician



AUDUR THORLAKSDOTTIR
Biorefinery Technician

Biospecimen and Sample Processing

Biospecimens or samples are further processed at the in-house biorefinery into subcellular components for internal quality control purposes or for research projects. This includes extraction of nucleic acids and proteins, cell culture and sorting, histology and immunohistochemistry. In 2011, IBBL set up automated equipment and protocols for handling of liquids (e.g. blood and urine) as well as DNA and RNA extraction.

Sample Testing

IBBL has acquired the necessary equipment and staff expertise to offer a range of molecular biological, cell biological and immunological assays as a service to its research project partners. Notably in 2011, IBBL installed the Luminex system for multiplex protein analysis and a Wafergen high throughput gene expression analysis platform. In addition, IBBL initiated pilot projects on INFLUX cell and nuclei sorting from tumour samples in collaboration with CRP-Santé and the University of Luxembourg.

BRIAN DE WITT
Sequencing Technician



WIM AMMERLAAN
Flow Cytometry Technician



IBBL, YOUR PARTNER IN BIOMEDICAL RESEARCH

OLGA KOFANOVA

Biospecimen Researcher



Biospecimen Research

IBBL strives to become an international centre of excellence in biobanking and thus actively conducts biospecimen research. A number of preanalytical variables such as the type and time of tissue fixation, not related to inherent biological differences, can potentially impact the results of downstream applications. Biospecimen research at IBBL is investigating the effects of collection, processing and storage on samples in order to find novel methods of improving sample quality and storage processes. Part of biospecimen research at IBBL is conducted using samples collected through a partnership with the Pathology Department in Thionville. In 2011, the IBBL team carried out 8 biospecimen research projects, presented at 14 international conferences and published 7 primary scientific articles. Of note is IBBL's participation in the FP7 STORE project between 7 partners investigating processing and quality control methods for formalin-fixed paraffin embedded samples. IBBL organised a consortium meeting of this project in Luxembourg in 2011.

CONNY MATHAY

Biorefinery Scientist

Partnerships & Clients

Since the primary goal of IBBL is to work in close cooperation with the various actors of the research sector in Luxembourg and abroad, numerous new collaborative research partnerships were initiated in 2011. One major partner of IBBL is the International Society for Biological and Environmental Repositories (ISBER). IBBL and ISBER collaborated on various projects, including the first international biobank Proficiency Testing (PT) Programme. This programme allows biorepositories performing characterisation of biospecimens to assess the accuracy of their testing by comparing their results with those obtained by other laboratories around the world. A Project Manager at IBBL coordinated and developed the programme in compliance with ISO17043. IBBL wrote all the standard operating procedures (SOPs), generated reference material and managed the installation and configuration of the PT software. In 2011, the first two schemes on DNA and RNA were run and 40 biobanks around the world used the ISBER-IBBL PT programme. Two new schemes on cell viability and tissue histology will be launched in 2012. All of the feedback from users indicates that this service from IBBL meets a very important need for the international biobanking community.

FRANCESCA POLONI

Project Manager





NIKOLAI GONCHARENKO
Project Manager

Fee-for-Service Agreements

IBBL has created a comprehensive service offer that is offered to third parties on a fee-for-service basis. This can range from simply storing samples to sample processing or analysis. In 2011, IBBL signed fee-for-service contracts with Helsingborg Hospital in Sweden and TcLand Expression in France to provide logistics and storage of samples from clinical trials. IBBL also analyses samples for microRNA content for the Charité Hospital in Berlin on its Wafergen platform, and generated leads for additional future agreements through negotiations with a number of other external parties.

IT Infrastructure

A robust IT infrastructure to maintain the security of data (medical and biospecimen) is an essential functional element at IBBL. An internal IT team is in charge of setting up an informatics platform to meet IBBL's core business and data analysis needs, ensure the privacy of individual data and provide data to its research partners. In 2011, several options for an Information Management Centre (IMC) were analysed and tested. In addition, a selection process for a commercial Laboratory Information Management System (LIMS) and online case report forms (electronic Clinical Record Forms, eCRFs) was initiated, which will extend into 2012. An important achievement was the Trusted Third Party (TTP) programme which was designed by CRP-Henri Tudor in collaboration with IBBL, developed by ebrc and installed at the end of 2011. This assures privacy of donor identity and medical information through a pseudonymisation process at the time of collection. Finally, a High Performance Computer (HPC) system with a storage capacity of 40 terabytes, necessary to the multifunctionality of the biorefinery and biospecimen research laboratory, was installed and configured.

MICHAËL HEYMANN
Bioinformatics Researcher



SEBASTIAN SERWIN
System Administrator



IBBL, YOUR PARTNER IN BIOMEDICAL RESEARCH

SABINE LEHMANN

Quality Manager

Quality Management

The IBBL is committed to comply with international standards in sample collection, storage, distribution and analyses and is on track to obtain ISO17025 accreditation and ISO9001 as well as NF S96-900 certification in 2013. In collaboration with the International Society of Biological and Environmental Repositories (ISBER), IBBL also aims to contribute to the establishment of new guidelines for processing and quality control of human samples by biobanks in Europe. Since 2010, an experienced Quality Manager has supervised the Quality Management System (QMS) of IBBL, which has been structured to guarantee compliance with the quality norms relevant for biobanking, ISO 9001, ISO 17025 and NF S96-900. Quality-relevant processes at IBBL are identified and documented in the form of Working Instructions (WIs), Standard Operating Procedures (SOPs) or Assay Protocols (APs). Each method is developed, optimised and formally validated based on literature survey, experimentation and supplier information. This applies to laboratory methods as well as software. The relevant documentation and procedures are reviewed and approved by IBBL staff and provide the basis for training to guarantee standardised execution and documentation of quality processes. Compliance with procedures is again validated with quality controls as well as internal and external audits.

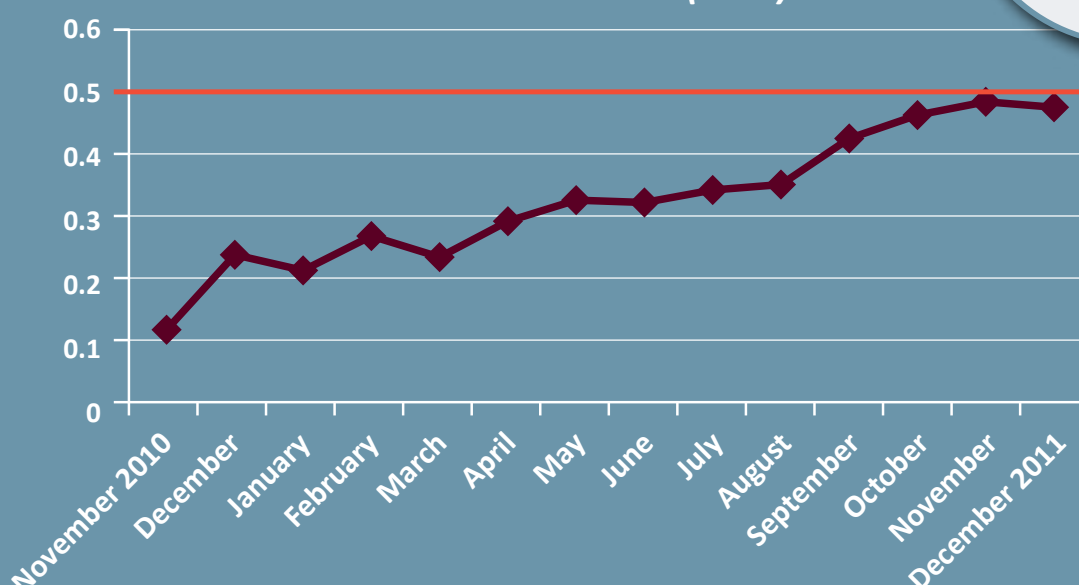


Quality Indicators – Document Setup

By the end of 2011, IBBL had achieved almost 50 % of effective standard operating procedures.

*Nearly 50% of
effective SOPs in
December 2011*

Achievement Rate (IBBL)



SUCCESS THROUGH COLLABORATION – THE PERSONALISED MEDICINE CONSORTIUM

The Personalised Medicine Consortium (PMC), a bold, collaborative, nation-wide initiative, fosters research that could help Luxembourg become a leader in adopting advances in personalised medicine into its healthcare system.



RUDI BALLING
LCSB, University of Luxembourg

Biomedical research is currently very exciting. Over the past ten years, we have witnessed tremendous advances in our understanding of diseases, largely due to the development of new technologies that allow analysis of the variations in our genetic structure. At the same time, a vision of next generation healthcare is starting to revolutionise how doctors treat patients worldwide: away from a 'one size fits all' approach to a personalised medicine approach, where the right drug is given at the right dose to the right patient at the right time, based on his or her molecular identity. This should not only improve our quality of life, but also help to provide more cost-effective healthcare. A number of such individualised treatments are already in current clinical practice, such as the administration of the antibody Herceptin to selected breast cancer patients. But much more research is needed to establish more links like that. This is something that no single research group or institution can do alone, since it requires interdisciplinary knowledge, expensive equipment, specialised staff and other necessary infrastructure.

The Personalised Medicine Consortium of Luxembourg

For this reason, in 2010, Luxembourg established the Personalised Medicine Consortium (PMC), a collaboration between IBBL, the Luxembourg Centre for Systems Biomedicine (LCSB) at the University of Luxembourg and the Lung Cancer Project at the Centre de Recherche Public Santé (CRP-Santé), with the objective to conduct research in joint projects in the field of personalised medicine. The PMC coordinates the activities, builds synergy and avoids duplication of efforts and resources.



ROBERT A. PHILLIPS
IBBL

SUCCESS THROUGH COLLABORATION – THE PERSONALISED MEDICINE CONSORTIUM

PMC MEMBERS AND SCIENTIFIC ADVISORY BOARD



The initial focus is on three disease areas where Luxembourg can create excellent research programmes to advance science and potentially improve the morbidity and mortality associated with the diseases. The three areas are cancer (lung, colon and breast), type 2 diabetes, and Parkinson's disease. The programmes are chaired or co-chaired respectively by Dr Guy Berchem and Prof Bruno Domon (CRP-Santé), Dr Carine de Beaufort (CHL), and Dr Nico Diederich and Prof Rudi Balling (CHL/LCSB). In addition, a normal population cohort will be created under the supervision of Marie-Lise Lair (CRP-Santé) to provide important data on the demographics of disease in Luxembourg.

IBBL provides research support infrastructure to the PMC and its partners by collecting, storing and redistributing biospecimens and related clinical and analytical data for defined research projects. Since 2011, three IBBL Project Managers work closely with the four PMC research programmes to identify their research needs, coordinate ethical approval and advise on study design. IBBL also provides administrative support by co-organising monthly PMC meetings, international conferences and an annual PMC retreat. The first PMC retreat took place in November 2011 in the presence of the newly created PMC Scientific Advisory Board, composed of six internationally renowned scientists that provide advice on the research activities of the PMC and on IBBL's operations.



MARIE-LISE LAIR
CRP-Santé



NICO DIEDERICH
CHL

The Road Ahead

The PMC aims to expand its existing international networks. IBBL's CEO Bob Phillips, who co-chairs the PMC, looks to do just that, "This is essential in a small country such as Luxembourg – especially when it comes to personalised medicine. Such a discipline requires data from a large number of cases if one is to make meaningful statements on the triggers of diseases and possible therapies." This will ensure the Luxembourg train of biomedical research will stay on track towards a successful future.



PMC RETREAT
November 2011

As a partner of the PMC initiative, the Luxembourg Lung Cancer Project gave IBBL the opportunity for a flying start to its biobanking activities.

Lung cancer is responsible for the highest number of cancer deaths each year in both men and women worldwide and once diagnosed, the chances of surviving the next 10 years are below 15%. Smoking remains widely recognised as the number one factor responsible for the disease but besides this, the poor prognosis is largely based on the absence of an effective diagnostic test for the disease and poor response rates to traditional treatment regimens such as chemotherapy or radiotherapy.

To help combat these devastating statistics, CRP-Santé created a personalised medicine project on lung cancer in collaboration with the Partnership for Personalized Medicine (PPM), of which the Fred Hutchinson Cancer Research Centre (FHCRC) and the Translational Genomics Research Institute (TGen) in the United States are members. The investigators seek to discover, evaluate and verify biomarkers – molecules that can be measured in blood or tumour tissue and be interpreted as early signs of the disease, or that could tell doctors which treatment they should give to the respective patient.

Early Detection

A key objective of this project is to provide the knowledge basis for novel diagnostic tests that could detect early signs of lung cancer from a simple blood sample. In order to achieve this goal, we first need to understand what molecular differences exist between cancerous and normal lung tissue. IBBL has been collecting blood and tissue from lung cancer patients for this study since its opening and by the end of 2011, 500 samples have been collected from 90 people, giving rise to more than 7,000 sample derivatives stored at IBBL. Dr Guy Berchem explains what is happening with these samples, “With the help of Prof Bruno Domon, Head of the Clinical Proteomics Centre at CRP-Santé, and collaborators at TGen, lung tumour tissue and normal lung from the same patient are compared.” He continues, “A preliminary study revealed around 500 proteins that show differences. From this list, 100 candidates are being analysed in more detail to identify potential biomarkers that could also be detectable in blood plasma.”



Improving Treatment

Whilst waiting for the first results of this study, Dr Berchem is keen to bring the benefits of personalised medicine to Luxembourg's cancer patients as quickly as possible. He points out, "A number of new drugs yield excellent results, but only with 5-10% of patients", and carries on, "it is therefore important to choose the right drug for each patient." A panel of already known relevant biomarkers that are currently not routinely available to clinicians was given to oncologists in Luxembourg for them to make an informed decision on which treatment to adopt for which patient. Dr Berchem is pleased, "We have made very good progress: Oncology Departments of 5 hospitals are working together." An evaluation is due to investigate whether this approach is beneficial and leads to improved treatment response and prognosis.

The Lung Cancer Project sets the stage for similar projects on colon and breast cancer in the near future. All three cancers represent serious health challenges in Luxembourg and the world.



After graduating from medical school at Université Libre de Bruxelles, **Dr Guy Berchem** received further training in medical oncology in Brussels and as a laboratory research fellow at the Lombardi Cancer Center, Georgetown University, Washington DC, where he participated in studies on prostate and breast cancer. In 2003, he founded the 'Laboratoire d'Héματο-Cancérologie Expérimentale' of CRP-Santé, which he still heads alongside his position as attending physician in Onco-Hematology at the Centre Hospitalier de Luxembourg. He co-founded the Luxembourg Society of Oncology in 2002 and has been one of Luxembourg's delegates to the European Medicines Evaluation Agency (EMA) since 2008.

2011 Lung Cancer Conference – Lung Cancer Treatment in the Era of Personalised Medicine

On 11th and 12th February 2011, 182 participants from 12 different countries gathered at the first international Lung Cancer Conference organised in Luxembourg by IBBL and CRP-Santé with the support of the Fonds National de la Recherche. A panel of 17 experts presented and led discussions on existing treatments and the latest advances in research that could lead to new and more promising, personalised lung cancer therapies. The conference is set to become a biennial event, with plans already underway for the 2013 edition.



Recent evidence implicates the gut microflora in the development of metabolic disorders. The PMC's Diabetes Programme will start by taking a closer look at the bacteria within us.

After completing her PhD in paediatric diabetes in the Netherlands and setting up a paediatric diabetes unit in Luxembourg, Dr Carine de Beaufort was keen to continue her work in clinical research. She raises her concern, "Diabetes is a huge problem and it is getting worse quicker than expected", and underpins her statement with some statistics, "The incidence in 0-14 year-olds in Luxembourg increased from 11,4 per 100,000 between 1989-1993 to 19 per 100,000 between 2004-2008 and in the whole population, we counted 17,400 patients in 2004 and now in 2009-2010 it seems to approach 30,000!" There is currently a rise in type 2 diabetes in younger age groups and there are differences between African, Asian and European populations. Yet still we do not know a lot about where the disease comes from, why we get it, and what we can do to improve or prevent it. Dr de Beaufort believes that there must be something other than lifestyle and food uptake that influences who gets it. "A lot of hypotheses came and went", she says, "but we still seem to be missing a link."

When the Personalised Medicine Consortium (PMC) approached Dr de Beaufort in 2010, she was immediately excited to lead the programme on diabetes. "For me, this is a great opportunity to get involved in more fundamental research", she admits, before explaining the basis of the resulting research projects. Teaming up with principal investigator Jochen Schneider and young investigators Paul Wilmes and Karsten Hiller at the Luxembourg Centre for Systems Biomedicine (LCSB), two studies were initiated in 2011 to investigate the relationship between genetic background and bacteria in the gut in the development of diabetes. The average human gut is home to trillions of bacteria and they make up 90% of all the cells present there – only 1 in 10 cells is actually human. This is our so-called microflora which contains many different types of 'good' and 'bad' bacteria that live in peaceful equilibrium inside us and fulfil important functions such as digesting part of our food using enzymes that our own cells don't have. A change in diet, such as eating more fat and sugar, viral or parasitic infections, the frequent use of antibiotics and other environmental or lifestyle changes may push this mutual relationship out of balance and affect our metabolism. If researchers can figure out whether bacteria or the balance between them are beneficial to prevent or even cure diabetes, they might be able to recommend simple changes in diet, develop drugs or transfer bacterial supplements that restore normal function.



THE BUGS WITHIN

One of the studies supervised by Dr De Beaufort, the Diabetes Multiplex Family Study (MUST), will look at families with a history of diabetes and compare whether sick and healthy siblings have different populations of bacteria in their intestines and whether these differences can be related to variations in the individual's genes or vice versa. A second study, called COSMIC (Colonisation, Succession and Evolution of Human Gastrointestinal Microbiome from Birth to Infancy), will look more precisely at how the gut microflora develops immediately after birth and how this may influence the development of diabetes later in life. For this study, the genetics and bacterial populations of healthy babies and babies at high risk to develop adult metabolic disease (e.g. diabetes) due to family history or low birth weight will be compared to those of their mothers. Information gained from these studies could provide the basis for later interventional studies looking at the modification of nutrition and the use of bacterial supplements in at-risk groups.



Dr Carine de Beaufort is a consultant in paediatric endocrinology and diabetology at the Clinique Pédiatrique de Luxembourg with a longstanding interest in clinical research on childhood diabetes. Over the past 20 years, she has been involved in many international and European research projects and has steered numerous national studies, working groups and committees.



For both studies, proposals to carry out two pilot studies in 2012 with a small number of individuals were submitted for ethics approval in late 2011. Corresponding questionnaires, study protocols, and training were developed with the support of the PMC Project Manager at IBBL. IBBL will coordinate the collection and storage of all biological specimens and associated clinical data required for these studies and assist with the processing and genetic analysis of samples to be used by the researchers at the LCSB.

“With a systems biomedicine approach looking at genetic background, I believe we can perhaps find the missing link”, says Dr de Beaufort enthusiastically. She continues, “The missing link may be different for everyone, but I think this is exactly what we must know to define the individualised treatment that each one of my patients needs.”

International Diabetes Workshop – Metabolic Disruption and Disease

In September 2011, IBBL and the PMC hosted a Diabetes Workshop with experts from Canadian Institutes of Health Research (CIHR) as well as the Qatar Foundation and the Weill Cornell Medical College in Qatar. The goal was to provide a forum that would allow exchange of ideas with a focus on metabolic disruption and disease. Participants discussed the Luxembourg projects (MUST and COSMIC) and proposed to plan similar studies in Canada and Qatar in a second phase to compare results between different ethnic backgrounds and geographical locations.

FACTS AND FIGURES

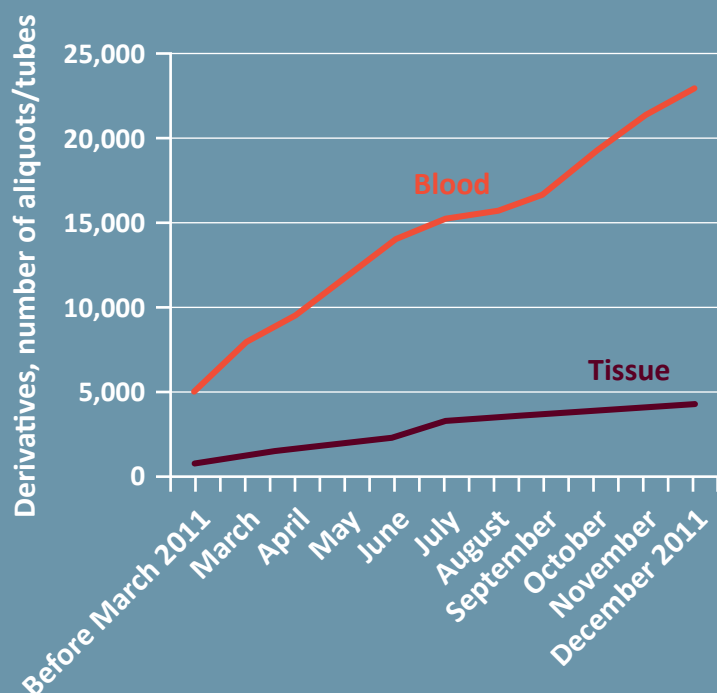
*More than
27,000 sample
derivatives from
over 750 donors*

Collection Statistics – Status December 2011

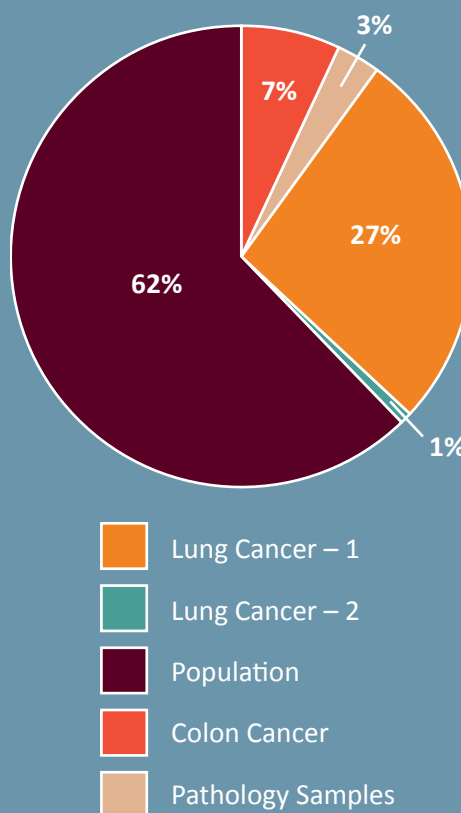
By the end of 2011, IBBL has collected more than 27,000 sample derivatives from over 700 individuals at 4 hospitals for 5 different projects.

Project	Lung Cancer	Lung Cancer Antibodies	Population Collection	Colorectal cancer	Thionville (Biospecimen Research)	Total
Subjects	91	24	618	18	NA	751
Sample Derivatives	7247	167	16871	1924	935	27,144
Tissue	1977	0	0	1368	935	4,280
Blood	5186	167	16871	539	0	22,763
Other	84	0	0	0	0	84

Number of Sample Derivatives



Derivatives Per Project



Active Projects in 2011

Name	Description	Parties involved
Lung Cancer Study	Biomarker validation in lung cancer	CRP-Santé, TGen
Population Collection	Collection of control biological samples from the population	Gesondheitszentrum, Clinique Ste Thérèse (Zithaklinik)
Lung Cancer Antibodies	Genetic and immunological risk factors for smokers to develop lung cancer	Laboratoire National de Santé (LNS)
Suppressor of Cytokine Signalling	Discovery of new therapeutic targets for colorectal cancer	University of Luxembourg, LNS
Target Temperature Management-Trial	Logistics, storage and supplies management for international clinical trial (Target Temperature Management after Cardiac Arrest)	CHL, CRP-Santé, Helsingborg Hospital, Lund University
Proficiency Testing	Proficiency testing mechanism to standardise the quality control of biospecimens	ISBER and multiple other organisations
Sample collection in Thionville	Biospecimen research project looking at fixation time and type	Laboratoire d'Anatomie et Cytologie Pathologiques Thionville
Mitochondrial dynamics in Parkinson's disease	A case-control study comparing different post-mitotic tissues from Parkinson's disease patients	CRP-Santé, CHL, LCSB
Opt-in	Luxembourg cohort	CRP-Santé
Diabetes Multiplex Family Study	Candidate genes within specific environments in diabetic and non-diabetic family members	CRP-Santé, LCSB
Colonisation, Succession and Evolution of Human Gastrointestinal Microbiome from Birth to Infancy	Investigating the relationship between gut microflora development immediately after birth and diabetes later in life	CHL, LCSB
MRSA	Real-time, SNP based strain typing system for European strains of methicillin resistant <i>Staphylococcus aureus</i>	TGen, LNS

FACTS AND FIGURES

Name	Description	Parties involved
Never Smoker	Whole genome sequencing of lung cancer in a “never smoker”	TGen
Splice variants in NSCLC	Identification of aberrant splice variants associated with non-small cell lung carcinoma	TGen, CRP-Santé
GBM Clonality	Clonal level profiling of cancer genomes: application to cancer drug development and personalised medicine	TGen, CRP-Santé
RNA storage	Investigating the effect of room temperature storage on RNA integrity	ISBER
Cell storage	Investigating the effect of storage and shipment conditions on cell viability	ISBER
STORE	Investigating processing and quality control methods for formalin-fixed paraffin embedded samples	FP7 STORE consortium
TcLand	Reception, storage and shipment of 1,400 samples of around 200 patients collected in a TcLand clinical trial	TcLand Expression
Charité-Wafergen	Analysis of 14 human samples for microRNA content on the Wafergen platform	Hôpital RCIS Charité Berlin

Meetings and Workshops

IBBL organised or co-organised 4 international meetings in 2011.

Event	Date	Type
Lung cancer conference	February 2011	International
Diabetes workshop	September 2011	International
PMC retreat	November 2011	National
EPAMED conference	December 2011	International

**4 scientific
conferences
organised
in 2011**

Publications in 2011/2010

2011

Biorepository Proficiency Testing for the Quality Control of biospecimens for the global biobanking community.

F. Poloni, G. Ashton, D. Coppola, Y. De Souza, AM. De Wilde, J. Douglas, J. Eliason, F. Guadagni, E. Gunter, O. Kofanova, S. Lehmann, C. Mathay, K. Shea, M. Sobel, G. Tybring, F. Betsou and the ISBER Biospecimen Science Working Group
Biopreservation and Biobanking, The ISBER Corner 2011.

Infectious Diseases Biobanking as a catalyst towards personalized diagnosis and public health. The Mycobacterium tuberculosis paradigm.

F Betsou, S Parida, M Guillerme, A Ramsay.
Tuberculosis 2011, doi:10.1016/j.tube.2011.07.006.

Prenalytical factors affecting quality of biological samples in a longitudinal birth cohort: results from the ELFE pilot study.

A Oleko, F Betsou, H Sarter, C Gerdil, I Desbois, MA Charles, S Vandentorren. *Biopreservation and Biobanking 2011;9:223-227.*

Influence of common preanalytical variations on the metabolic profile of serum samples in biobanks.

O Fliniaux, G Gaillard, A Lion, D Cailleu, F Mesnard, F Betsou.
J Biomol NMR (2011) 51: 457-465

Standard PREanalytical Codes (SPREC): A New Paradigm for Environmental Biobanking Sectors Explored in Algal Culture Collections.

E.E. Benson, F. Betsou, R. Amaral, L.M.A. Santos, K. Harding.
Biopreservation and Biobanking 2011;9:1-12.

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A. Carter, F. Betsou.
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2010

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What are three actionable strategies to improve quality in biomedical research.

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Biopreservation and Biobanking, The Experts Speak 2010;8:121-125.

FACTS AND FIGURES

Profit and Loss Account (EUR)

CHARGES	2011	2010
Frais d'études et de recherche	2.077.607,36	5.630.925,00
Consommation de marchandises et de matières premières et consommables	297.744,69	341.773,78
Autres charges externes	1.136.596,25	1.397.416,33
	1.434.340,94	1.739.190,11
Frais de personnel		
Salaires et traitements	2.196.953,84	1.535.502,96
Charges sociales	272.044,67	166.235,69
	2.468.998,51	1.701.738,65
Corrections de valeur sur immobilisations incorporelles et corporelles	813.386,70	554.767,55
Autres charges d'exploitation	48.108,43	22.014,11
Intérêts et charges assimilées	790,92	10.352,07
Excédent de produits de l'exercice	3.645.539,65	59.511,13
	10.488.772,51	9.718.498,62
PRODUITS		
Contribution financière	10.000.000,00	9.600.000,00
Autres produits d'exploitation	442.638,08	101.539,88
Autres intérêts et produits assimilés	46.134,43	16.958,74
	10.488.772,51	9.718.498,62

The financial statements of IBBL were audited with satisfactory results by HRT Revision.
A full Auditor's Report is available from IBBL upon request.

Balance Sheet (EUR)

ACTIF	2011	2010
ACTIF IMMOBILISE		
Immobilisations incorporelles	8.509,23	3.464,64
Immobilisations corporelles		
Terrains et constructions	1.420.075,71	1.610.961,39
Installations techniques et machines	1.820.383,58	1.729.679,27
Autres installations, outillage et mobilier	672.921,61	570.869,16
	3.913.380,90	3.911.509,82
ACTIF CIRCULANT		
Créances		
Autres créances		
dont la durée résiduelle est inférieure ou égale à un an	1.193.262,54	972.276,21
Avoirs en banques, avoirs en compte de chèques postaux, chèques et encaisse	10.427.775,90	7.199.392,98
	11.621.038,44	8.171.669,19
COMPTES DE REGULARISATION	114.267,23	23.449,57
	15.657.195,80	12.110.093,22
PASSIF		
CAPITAUX PROPRES		
Patrimoine	4.000.000,00	4.000.000,00
Excédent de produits reportés	5.706.116,75	5.646.605,62
Excédent de produits de l'exercice/de la période	3.645.539,65	59.511,13
	13.351.656,40	9.706.116,75
DETTES		
Dettes sur achats et prestations de services		
dont la durée résiduelle est inférieure ou égale à un an	2.112.550,19	2.272.373,94
Dettes fiscales et dettes au titre de la sécurité sociale		
Dettes fiscales	110.011,80	78.797,09
Dettes au titre de la sécurité sociale	82.977,41	52.805,44
	2.305.539,40	2.403.976,47
	15.657.195,80	12.110.093,22

IBBL Staff

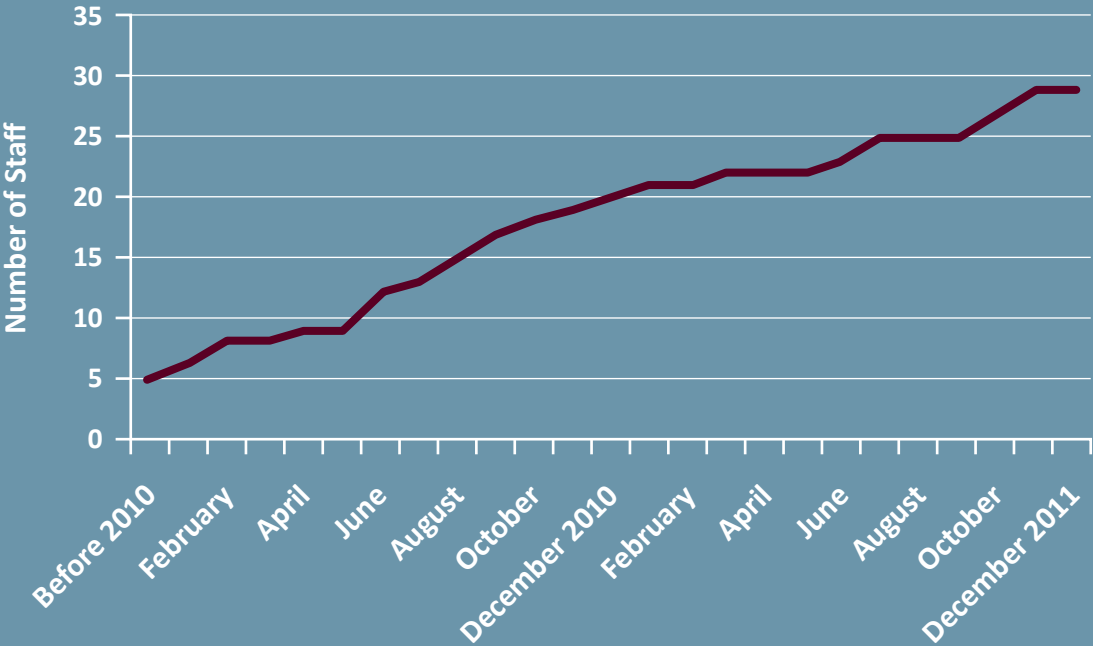
Since its foundation, IBBL has hired 29 members of staff with 14 different nationalities. Amongst those, 12 hold advanced medical or academic degrees.

Nationality	Nr	%
Belgium	2	6.9
Canada	1	3.4
France	8	27.6
Germany	2	6.9
Greece	1	3.4
Iceland	1	3.4
Italy	1	3.4
Luxembourg	2	6.9
Netherlands	1	3.4
Poland	3	10.3
Portugal	2	6.9
Ukraine	2	6.9
United Kingdom	2	6.9
United States of America	1	3.4
Total	29	

Staff Category	Nr	%
Research	5	17.3
Technical	13	44.8
Administrative	11	37.9
Total	29	



Evolution of IBBL Staff



IBBL Governing Board

The Governing Board is responsible for basic oversight, review of operations, specimen utilisation and for ensuring that the organisation continues to meet goals and objectives.

The Governing Board shall determine the strategic orientations of the foundation's activities and shall ensure their implementation in order to allow for the fulfilment of IBBL purposes.

Jean-Claude Schmit	CRP-Santé	President
Patrizia Luchetta	Ministry of Economy and Foreign Trade	Vice-President
Etienne D'Hoedt	CRP Henri Tudor	Member
Lucien Hoffmann	CRP - Gabriel Lippmann	Member
Lucienne Blessing	University of Luxembourg	Member
Josiane Entringer	Ministry for Higher Education and Research	Member
Mike Schwebag	Ministry of Health	Member

IBBL Management Committee

The Management Committee has responsibility for all operations of the IBBL, including collection, processing, storage and distribution of samples, and other activities as assigned by the Governing Board.

Robert A. Phillips, PhD	Chief Executive Officer
Dominic Allen, MBA	Chief Operating Officer
Michel Laborde, MD	Chief Information Officer
Fay Betsou, PhD, HDR	Chief of Biospecimen Science
Damien Aps, MBA	Chief Financial Officer
Arnaud d'Agostini, MA	Communications Manager
Laurent Antunes, MD	Chief Clinical Department/Pathologist



from top to bottom, left to right:

**MARIE-PAULE HOFFMANN, FAY BETSOU,
MICHEL LABORDE, ARNAUD D'AGOSTINI,
DAMIEN APS, ROBERT A. PHILLIPS, DOMINIC ALLEN**
MISSING: LAURENT ANTUNES

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