

LERU ENTERPRISE AND INNOVATION COMMUNITY

OPEN FOR BUSINESS



LERU ENTERPRISE AND INNOVATION 2013

Number of:

Patent applications > 1040
Licences agreements > 850
Active spinouts > 730
Industry collaborations > 9400



INTRODUCTION BY THE LERU CHAIR

Since its founding in 2002, the League of European Research Universities (LERU) has emerged as a prominent advocate for the promotion of basic research at European universities. LERU strongly believes that basic research plays an essential role in the innovation process and significantly contributes to the progress of society.

LERU aims at furthering the understanding and knowledge of politicians, policy makers and opinion leaders about the role and activities of research-intensive universities. Drawing on the impressive academic potential and expertise of its network, LERU has a strong and significant impact on research policy in Europe.

LERU is dedicated to continuing this through direct communication and discussions within the policy community, sound proposals for further improvement

and progress, and carefully considered position papers on fundamental issues such as academic careers and the role of universities.

Our broad spectrum of activities and our contributions to the research policy debate have established LERU's reputation as a major stakeholder in the EU. LERU now has an important and well-respected voice in the discussions about the future of Europe's research policy. In the years to come, LERU will continue to influence policy, and intensify cooperation among like-minded organisations worldwide to stress the importance of universities for research and innovation.

This brochure provides an excellent overview of our network and its enterprise and innovation activities.

I wish you pleasant reading.



Prof. Alain Beretz
Chair of LERU



INTRODUCTION BY THE CHAIR OF THE LERU ENTERPRISE AND INNOVATION COMMUNITY (EIC)

It is a great pleasure to launch the Enterprise and Innovation Community with the publication of this document, which describes some of the exciting ways in which the LERU members engage in Enterprise and Innovation.

There can be no doubt that universities will play an ever increasingly important role in driving Europe's knowledge economy and the jobs that European citizens need.

LERU members represent many of Europe's leading universities, research powerhouses in their own right, and at the very heart of their cities and regions. And although the greatest contribution that our universities is long term through research, innovation and education – we must not forget that our universities have collectively more than 500,000 students and provide employment for more than 100,000 people.

In 2013 LERU decided to embark upon the creation of a new venture, the Enterprise and Innovation Community in order to further build on the collective strengths of the members for the social and economic benefit of Europe.

Our vision is to establish a world-class collaborative network for knowledge exchange, enterprise and innovation. LERU members will be at the heart of this network, but we will be inclusive in order to further our aims. We envisage close collaboration with other related organizations and universities and of course with other public, private, charitable organizations. Our strategic aims are:

- Create effective networks – to promote an even greater commitment to entrepreneurship, innovation and working with industry
- To share and spread good practice – through events and collaborative ventures
- To communicate the LEIC activities to the world – through publicity activities and policy / position papers.

This document is the first of a series that will highlight the profoundly important role that the LERU members play in driving economic and social benefit in Europe. It also highlights the breathtaking array of exciting activities that are already underway and which points to a future in which our universities can help Europe achieve long term sustainable prosperity.

I hope that you enjoy reading the document and if you would like to become involved in our community please contact us at: alea.lopezdesanroman@leru.org



Prof. Stephen Caddick,
Chair of EIC



UNIVERSITY OF AMSTERDAM

About Knowledge Valorization at the University of Amsterdam

Objectives

The University of Amsterdam emphasizes the importance of the use of scientific knowledge in society. Since the UvA has strong points in all disciplinary fields (science, humanities, social and biomedical sciences), our strategy is to develop products, services and new businesses from all these fields, that contribute to society in general. By creating social and economic value out of research and education, the UvA also tries to generate financial resources to stimulate its basic research. By partly focusing on the needs of the Amsterdam region, the UvA wants to contribute to the welfare of its inhabitants.

www.uva.nl

Amsterdam Centre of Entrepreneurship (ACE)

ACE's mission is to promote an entrepreneurial climate within and outside the university. ACE tries to achieve her mission with entrepreneurial education, internationally valued research and outreach. The curriculum is distinguished by its interdisciplinary, interdepartmental and cross-institutional character.

www.ace-amsterdam.org

University of Amsterdam Holding B.V.

UvA Holding BV was established in 1992 by the Executive Board of the University of Amsterdam in order to develop and implement market-oriented activities. It covers commercial activities which arise directly from university research or teaching. These new ventures are (temporarily and often partly) owned by the UvA Holding BV. At the moment the number of these companies is seven.

www.uvaholding.nl

Supporting teams

Technology Transfer Office

UvA's Technology Transfer Office (TTO) is the linking pin between the University and the marketplace. It assists researchers who are seeking funding for their research projects or collaboration partners. Its network includes researchers in the Amsterdam University of Applied Sciences (HvA). These partners can help researchers to develop their invention, whether or not under license, and to set up businesses. TTO is also the point of contact for business and institutions seeking to improve their processes or systems, that want to have research conducted, or to collaborate with our researchers. In addition, TTO has a keen eye for the role of intellectual property in a research university.

www.tto.uva.nl

Recent Highlights

University supports small businesses at the Amsterdam Science Park

At the Amsterdam Science Park, UvA's Science department is based, as well as three national research institutes and quite a few businesses in the field of science and informatics. It offers many facilities to stimulate knowledge valorization. Since 2013 the UvA Venture Lab is located at the Amsterdam Science Park, which supports researchers, PhD's, students, science based start-ups and spin offs to build successful high growth businesses.



Key data

64	New inventions evaluated by the Technology Transfer Office
2	Spinoffs
22	Patents in stock
2	Patents transferred to companies
4	Patents licensed to companies
2200	Students Entrepreneurship



Transfer Highlights

Bioplastic, a major sustainable solution

The chemists Prof. Gadi Rothenberg and Dr. Albert Alberts of the UvA discovered this material by chance, in the search for a new biofuel. Bioplastic until now covered only a small percentage of recyclable materials (such as PET30 and PLA). This new bioplastic is completely plant-based and biodegradable. By working together with the HvA (Amsterdam University of Applied Sciences), the bioplastic invention could easily be scaled up. Several companies have already shown interest in the plastic.

Sightcorp a computer vision technology startup

Sightcorp is a fast growing spin-off (2013), based on advanced Computer Vision, Face Analysis and Emotion Recognition tech-

nology, of the University of Amsterdam. It is located on the Amsterdam Science Park. Funding was provided by a privately owned internet technology company. This company is the third spinoff company of the UvA, based on the Section computer vision of our Science department.

Partnership with big industries

In January 2014, the Advanced Research Centre for Nanolithography (ARCNL) has started at the Amsterdam Science Park. ARCNL is a new, both privately and publicly funded, research centre, founded on the initiative of the Dutch company ASML. Other partners are NWO (Netherlands Science Council), FOM (The Physics 'daughter' of NWO), the University of Amsterdam, and VU (Vrije Universiteit, also based in Amsterdam).

ARCNL will conduct fundamental re-

search relating to nanolithography, the most important technology for manufacturing computer chips and processors in PCs, smartphones, and tablets, and therefore crucial for innovation in the global semiconductor industry.



Fotografie: Fred van Diem - oktober 2012

Roberto Valenti & Theo Gevers

Computer Vision Technologies.

"Think of all the possibilities of a computer that visually recognizes almost everything: faces, animals, gadgets...you name it!"

Spin off: SightCorp BV



Fotografie: Fred van Diem - oktober 2012

Prof. dr. Gadi Rothenberg & Dr. Albert Alberts

Universiteit van Amsterdam, FNWI/HIMS Sustainable Plastics

Gadi & Albert have invented a new, plant-based resin that is non-toxic and biodegradable. They are now developing it as a replacement for petroleum-based polymers. The UvA has filed six patent applications on this invention.

Tintoria Piana and Clearwater (USA)



UNIVERSITAT DE BARCELONA

The University of Barcelona (UB) aims to contribute to the business community's competitiveness and to improve social welfare. It thereby has the objective to facilitate the transfer of knowledge and the results of R&D&I to society.

UB has more than 5,300 teaching and research staff carrying out basic and applied research work, who are organized in more than 240 consolidated research groups. In order to bolster R&D&I activity and improve the quality of public and private sector innovation, the University of Barcelona Group (UB Group) has an innovation system that develops a number of projects to promote knowledge and technology transfer between the UB and private and public businesses and institutions.

The UB Group's agencies are:

Bosch i Gimpera Foundation (FBG)

- Knowledge Transfer Office

Its goal is to bring the scientific and technical skills and the research results generated at the UB to the market by means of contracts for R&D&I, consultancy services, the protection and licensing of Intellectual Property and the creation of new knowledge-based companies (spin-off).

fbg@fbg.ub.edu

Patents Centre

The Patents Centre focuses on research and training in Intellectual Property rights and documentation on the patent system.

nuriasans@patents.pcb.ub.es

Scientific and Technological Centres (CCiTUB)

The CCiTUB is a research infrastructure facility that provides state-of-the-art characterization technologies and specialized technological advice to both the research community and industry. It is also devoted to methodological research and development in order to improve the capabilities of the UB research infrastructures. It is one of the largest mid-size infrastructure facilities in Spain, with highly-qualified staff, and the broadest range of characterization technologies.

info@ccit.ub.edu

Barcelona Science Park (PCB)

PCB, the first science park established in Spain, offers a quality environment for research, technology, innovation and business. It is an ecosystem for innovation, where public research institutes, private companies and technology platforms carry out R&D&I activities and regularly

meet, with networking activities to foster innovation. PCB hosts a Biocubator to support new biotechnology companies.

info@pcb.ub.cat

Institute of LifeLong Learning (IL3)

The institute allows professionals to increase their competences and employability, and the improvement of companies and organizations competitiveness. It has a Corporate Solutions Area that designs and implements ad hoc programs that help organizations to become more efficient, innovative and competitive through the training and development of their human capital.

info.il3@ub.edu





© CxR-FBG

Recent Highlights

Centre for Innovation and Advanced Technologies of the University of Barcelona (CITA-UB)

CITA-UB was created in 2011 by UB and FBG as a meeting point between research groups of the UB and companies interested in carrying out R&D&I projects. It promotes and fosters interdisciplinary transfer activities in various fields of knowledge. CITA-UB has set up an External Advisory Committee made of leading companies with the purpose of joining industrial needs with UB expertise and capabilities in order to develop collaborative research and join innovative projects.

Barcelona Entrepreneurship Institute (BIE)

Created in 2013 to promote entrepreneurship, BIE gathers research groups and teaching staff on this subject area. The main objective of BIE is to coordinate and reinforce the promotion and dissemination of entrepreneurial culture among students, UB researchers and academic staff. It also supports the entrepreneurial

projects in different fields of knowledge arisen from the University of Barcelona.

Success stories: UB innovations in the market

Kit for monitoring and quantifying Hepatitis A virus and enteric viruses in food, environmental and clinical samples.

The Department of Microbiology has been working on the development of a kit for determining, in a very simple manner, the amount of pathogens in food.

The patents were licensed to the French company Ceeram. Currently Ceeram is developing several kits, marketed worldwide, for the detection of viruses in food, environmental and clinical matrices, and are being successfully commercialized not only in European markets, but also in emerging markets like Peru and Egypt, among others. Hence, this technology simplifies the virological quality control of certain food products and the environment in which they are processed, avoiding or reducing food viral outbreaks that, besides their impact on consumers'

health, entail heavy economic losses due to the detention of the affected food.

Innovation as a way to overcome the crisis: How constant investment in R&D&I has relaunched an entrepreneurial project by developing a new copper recycling technology.

The ongoing collaboration (since 1996) between the company La Farga Lacambra and the Research Group DIOPMA has allowed the company to develop both a worldwide innovative production process and the use of micro alloyed copper as high-tech material for the rail sector. The technology and knowledge transfer carried out by the research group has decisively contributed to La Farga Lacambra becoming one of the worldwide top companies in its sector, and the first one to produce high performance copper wires from secondary raw materials.



© CCITUB

Key data

- 25 million € income from R&D&I projects, technical services and consultancy with companies and institutions
- 1.2 million € income from corporate training
- 17 priority patent applications, >200 (2006-2013)
- 10 license agreements, >60 (2006-2013)
- 3 spin-off created, 31 (>2002-2013)
- 12 University-Industry chairs
- 10-15 Industrial doctoral projects/year

UNIVERSITY OF CAMBRIDGE



Cambridge is Europe's leading centre for innovation, and the University of Cambridge is at its heart. The 1,500 companies in the Cambridge Cluster have a combined annual turnover of £13 billion and employ more than 57,000 people. The constant exchange of ideas between the University and the companies in and around Cambridge is one of the many characteristics that makes the cluster so successful.

The University provides a range of support to encourage innovation, including through our commercialisation arm Cambridge Enterprise, University departments that run courses in entrepreneurship including the Judge Business School and the Centre for Entrepreneurial Learning, incubators such as ideaSpace, and a range of student societies dedicated to innovation and entrepreneurship. (info@ideaspace.cam.ac.uk, cfel@jbs.cam.ac.uk)

In addition to the organisations and groups dedicated to supporting innovation at the University, there is also an incredible depth of expertise in the wider

Cambridge network. Many of our most successful entrepreneurs actively support the next generation of Cambridge inventors and entrepreneurs, either through advice and mentorship, or through investment.

One of the world's leading technology transfer offices, Cambridge Enterprise exists to help ensure that University research achieves a real and meaningful impact on society, whether through new innovations for industry, the creation of new spin-out companies, or sharing University expertise with partners in industry, government and the non-profit sector.

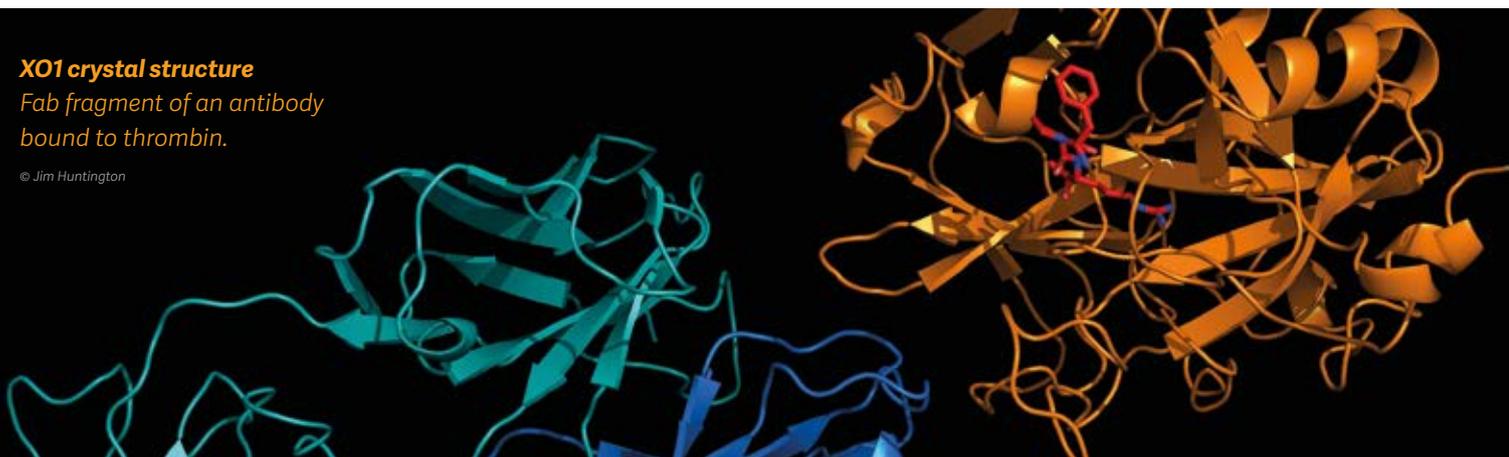
Cambridge Enterprise supports University researchers at all stages of the commercialisation process, from securing translational funding, to patenting and licensing new inventions, to facilitating consultancy projects between our researchers and some of the world's leading companies, to providing advice and funding for new companies based on Cambridge research.

Cambridge Enterprise works with more than 1,200 University inventors and entrepreneurs from across the University, at all stages of the commercialisation process. The CE team helps identify the most promising new inventions and companies, and provides the support to help them grow. From proof of concept all the way to exit, Cambridge Enterprise can provide the necessary financial support to help support the continuing and future impact of Cambridge research. (enquiries@enterprise.cam.ac.uk)

More information on the University's innovation activities can be found at www.cam.ac.uk/innovation and www.enterprise.cam.ac.uk

XO1 crystal structure
Fab fragment of an antibody bound to thrombin.

© Jim Huntington





Recent Highlights

New financial support for Cambridge companies:

Cambridge Innovation Capital (CIC) is a new £50 million investment business which has been established, with the support of the University, Invesco Perpetual, Lansdowne Partners, ARM and other partners, to provide long-term finance that will help companies bridge the critical middle stage of commercial development, the so-called 'valley of death'. The establishment of CIC is a bold step by the University and its co-investors to help University spin-outs and other Cluster companies take the next steps in their development.

Towards the 'holy grail' of anticoagulant drugs:

A new spin-out company from the University and Addenbrooke's Hospital, XO1 Ltd, raised \$11 million in funding from Index Ventures and Cambridge Enterprise to develop ichorcumab, a new anticoagulant drug candidate that has the potential to save millions of lives by preventing heart attacks and strokes without causing bleeding. Anticoagulants such as warfarin are widely used to prevent thrombosis, a major cause of heart attacks and strokes. However, as blood clotting is essential

to prevent excessive bleeding, the use of these drugs is limited by the bleeding side-effects they cause. An anticoagulant drug which does not cause bleeding is considered the 'holy grail' in this area of research.

New collaborations with industry:

Cambridge is the first university to establish a programme of scientific open collaboration with GlaxoSmithKline and other partner organisations, in order to advance the development of new medicines. Revolutionary treatments which could alleviate pain in people with hypersensitivity to heat, provide a new regenerative therapy for multiple sclerosis, and relieve symptoms for those with cat and dog allergies, are currently being developed by Cambridge researchers at Stevenage BioScience Catalyst, the UK's first open innovation bioscience campus.

Hope for MS:

A transformational new treatment for multiple sclerosis (MS) - the result of over three decades of research in Cambridge - was approved by the EU agency responsible for regulating new drugs.

The European Medicines Agency approved the drug Alemtuzumab, to be known by the brand name Lemtrada and

previously called Campath-1H (for 'Cambridge Pathology 1st Human'), for the treatment of MS. The approval concludes a nearly 40-year epic journey from fundamental research to discovery of an effective treatment.

CASTEP achieves \$30 million in sales:

CASTEP, a software tool which uses quantum mechanics to allow designers to predict the properties of materials has reached the commercial milestone of \$30 million in sales. CASTEP allows researchers to determine what the most stable structure of a new material would be, what its surfaces will look like and how the bulk and the surface will behave when exposed to different chemicals. It is widely used in the oil and gas, chemical and semiconductor manufacturing industries, where along with other techniques, it can be used to enhance the efficiency of processes, and help identify the origin of failures in devices and products.



Key data

- £1.25 billion in follow-on funding raised by University portfolio companies to date
- £16.6 million income in licensing, consultancy and equity income from Cambridge Enterprise in 2013
- 300+ high-tech ventures in the past 20 years in which University of Cambridge people and technology have been involved
- 1,200+ researchers supported by Cambridge Enterprise, at all stages of the commercialisation process
- 109 licenses signed in 2013
- 3.6x return on investment made by the University seed funds since 1995
- 22% increase in signed consultancy contracts over 2012, worth a total of £5.3 million
- 850+ Total number of active IP licensing, consultancy and equity contracts under management
- 205 patent applications filed in 2013



THE UNIVERSITY OF EDINBURGH



THE UNIVERSITY of EDINBURGH

Edinburgh Research and Innovation

For over forty years, the University of Edinburgh has successfully translated its world-class research, academic expertise and research facilities into intellectual, social and economic benefits for business, industry and society, through its commercialisation arm, Edinburgh Research and Innovation (ERI).

Commercialising the University's world-class research

ERI has an enviable record in the efficient and effective stewardship of the intellectual property (IP) generated by the world-class research undertaken at the University. ERI has invested heavily in developing a robust and successful commercialisation process to evaluate any new idea, discovery or invention and determine the most effective commercialisation route, including the sourcing of development funds and finding suitable partners, conducting due diligence, developing licensing agreements and acquiring patents.

Helping growth and competitiveness in business and industry

ERI aims to make it easier for business and industry to engage with the University of Edinburgh by developing fruitful partnerships through a range of technology transfer services, such as sponsored research (including studentships and knowledge transfer partnerships), licensing and consultancy. As a result, ERI has developed an impressive number of links with business and industry each year, with almost 2,400 industry partnerships in the past five years.

Encouraging a culture of enterprise in Edinburgh

ERI delivers a comprehensive range of services to support entrepreneurial staff & students establish enterprises that have the potential to become major players in their sectors as they grow and employ more staff. This includes an award-winning information, advice and mentoring service for students called LAUNCH.ed, as well as an Accelerator Pipeline initiative that helps postgraduate students who intend to build high-growth businesses in Scotland. This high level of support has helped University of Edinburgh staff and students set up 171 new businesses in the past five years.

Making a significant contribution to the UK/global economy

An independent economic impact report in May 2012 concluded that ERI's commercialisation activities generate over £164 million GVA per annum for the UK economy (globally over £200 million), and support almost 3,000 jobs in the UK (over 3,500 worldwide). The same report also established that of the 262 new companies created at the University since 1969, 81% are still trading in some capacity, including Wolfson Microelectronics PLC.

This record of success firmly establishes Edinburgh Research and Innovation as a recognised UK leader in commercialising research and entrepreneurship, and strengthens the University's position as one of the top-performing enterprise universities in the UK.

Key data

- 300 new University of Edinburgh spin-out/start-up businesses created in the past 15 years
- 3,500+ jobs supported worldwide through ERI's commercialisation activities in the past 10 years
- £200+ million GVA per annum for the global economy through ERI's commercialisation activities in the past 10 years
- 2,400 industry partnerships in the past five years, to transfer the University's knowledge and expertise to business
- 69 patent applications filed in 2012-13
- 50 license agreements signed in 2012-13
- 35 new spin-out/start-up businesses in 2012-13
- 501 commercial research, licensing and consultancy contracts in 2012-13
- £29.9 million income from commercial research, licensing and consultancy contracts in 2012-13

*ERI team receiving inaugural
BBSRC Activating Impact award from
BBSRC CEO, Professor Douglas Kell*

© Tim Gander 2013



Recent Highlights

Sparking Impact

In 2013, ERI won BBSRC's inaugural Activating Impact Competition 2013 to fund a new knowledge exchange initiative at the University of Edinburgh.

ERI's success in winning the competition was due to its strategy, track record and vision, having established itself as a sector-leading organisation with an excellent record in delivering impact from bioscience research at the University of Edinburgh.

Investing in young companies

In 2011, ERI launched Old College Capital, an investment vehicle established to make mid- and late-stage venture investments into some of the University's leading spin-out and start-up companies as they grow and develop. The University is also a funding partner in new £25million venture capital fund, led by Epidarex Capital (formerly known as 'Rock Spring Ventures'), which will provide vital financial investment in early stage life science companies in Scotland.

Click-thru Licensing

ERI was the first UK technology transfer office to make technologies available to licence online via instant standardised terms with the launch of Click-thru Licensing. This no fuss approach is focussed on a range of intellectual property opportunities that were available to license under a standardised non-exclusive licence agreement.

ERI has just launched a new 'click-thru licensing' portal to provide faster and easier access to research materials, software and copyright materials developed at the University of Edinburgh.

<https://licensing.eri.ed.ac.uk/>

Open Technology

As part of Edinburgh Research and Innovation's (ERI's) efforts to encourage knowledge exchange with business and industry, we have developed an initiative (called 'Open Technology') to provide easy access to the University of Edinburgh's inventions. This idea of 'free' availability of intellectual property is not a new idea at the University of Edinburgh. ERI's Open Technology highlights a range of opportunities where technologies developed by the University of Edinburgh are made available at no cost.

<http://www.research-innovation.ed.ac.uk/WorkingWithUs/OpenTechnology.aspx>

University Technology - Invented in Scotland

ERI has played a leading role in the development of the University Technology – (UT) initiative, which collates IP from Scotland's research universities to make it easier for potential investors worldwide to search for new technologies and inventions and to proceed based on a standardised set of agreements. Easy Access IP has also been implemented on UT.

<http://www.university-technology.com>

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UNIVERSITY OF FREIBURG

University resources

Already a comprehensive university at its founding in 1457, the University of Freiburg offers undergraduate and graduate studies as well as professorial qualification in all important disciplines today: the humanities, natural and engineering sciences, medicine, law, and theology. Freiburg is one of Germany's leading universities in patent applications.

Concerning technology transfer, University of Freiburg has installed a central Technology Transfer Office:

Technology Transfer Office (ZFT)

The ZFT (Zentralstelle für Technologietransfer) of the University of Freiburg works as an interface between the University Medical Centre Freiburg, the University of Freiburg and the regional enterprises. Closely connected to the ZFT, "Campus Technologies Freiburg GmbH" was founded in 2002 by the Medical Centre Freiburg as a service enterprise with the aim of promoting innovations out of research by the University and the Medical Centre.

The ZFT feels responsible to make the results of the Medical Centre's research and the University of Freiburg economically available. An active partnership with the involved companies is an important factor.

The ZFT has about 25 staff members and is organized into the following organisational units:

The service of the **Patent Office** (Patentstelle) encloses

- Serving as central point of contact for all employee invention from University and University Medical Centre of Freiburg, being the competent authority to register the invention disclosure in accordance with the German law about employee inventions
- Inventor's consultation
- Patent application
- Out-licensing

The service of the **Contract Office** (Vertragsstelle) encloses

- Consulting in planning and contract drafting of R&D projects with companies like R&D contracts
- Scientific cooperations (i.e. collaborative research projects)
- Confidential Disclosure Agreements (CDA) and Material Transfer Agreement (MTA) as well as intellectual property rights (previously established rights, new rights, inventions)

The **Founders Office** (Gründerbüro) offers (read more about "Culture of entrepreneurship"):

- Business consulting and coaching
- Entrepreneurial teaching and training
- Corporate planning inclusive of business plans, business simulation

- Network services to foster funding and financing opportunities

Contact details: info@zft.uni-freiburg.de, <http://www.zft.uni-freiburg.de>

Freiburg Academy of Science and Technology - FAST

FAST represents an innovative approach for educational cooperation between industry and science. In strong cooperation with the Fraunhofer Gesellschaft, FAST offers employees from industry "Training-on-the-project" at university or research institutions. The programs are demand-driven, highly individualized, flexible and tailor-made.

Contact details: Krause@fast.uni-freiburg.de, <http://www.fast.uni-freiburg.de/>

Recent Highlights

Culture of Entrepreneurship

University of Freiburg with its strategy plan "Windows for Entrepreneurship" aims to build up a university-wide culture of entrepreneurship that addresses all members of the university, from student to scientist to service staff members. The main program lines are:

- Awareness raising and mobilization for entrepreneurial thinking and acting.



© Universität Freiburg, Sebastian Bender

- A modular target-group-specific entrepreneurship teaching and qualification program.
- Individual guidance and coaching for start-up projects.
- Support scientists with the economic realization of research results starting from a very early stage (Transfer Coaching)

The “Windows for Entrepreneurship program” involves under the direction of the Founders Office (Central Technology Transfer Office) different university units: Science Support Centre, Freiburg Academy of Continuing Education as well as Public Relations. The program is supported by the EXIST program of the Federal Ministry of Economic Affairs and Energy (BMWi)¹.

High Performance Centre Sustainability

The University of Freiburg and five institutes of Fraunhofer Gesellschaft intend to

build up an alliance with a national “Centre of Excellence for Sustainability”(“Leistungszentrum Nachhaltigkeit”).

The Centre of Excellence of Freiburg combines the expert knowledge of the Fraunhofer Institutes and the university focusing on **Sustainable Materials, Energy Systems, Resilience Engineering and Societal Transformation** and covers at the same time topics which have a central importance tackling the challenges regarding a sustainable development.

By this alliance, Freiburg will be able to offer excellent basic research, solution-oriented applied research, basic and revolutionary innovations, products and services for the key elements of sustainable development strategies.

A core element of the Centre of Excellence is the planned “**Institute for Sustainable Systems Engineering**” (ISSE) at the faculty of Engineering, which was conceived by Fraunhofer und the university.

The institute will especially cover the technological and engineer-scientific dimension of the above-mentioned research priorities.

As the topic “**innovation and transfer**” is of a high importance for the cooperation between Fraunhofer and the University in the context of the Centre of Excellence, a common innovation strategy is to be developed. Furthermore, important industry partners are to be involved in the development process by the beginning. The object is the Centre’s establishment as a nationally and internationally visible alliance up until 2017.



¹ EXIST aimed at improving the entrepreneurial environment at universities and research institutions and at increasing the number of technology and knowledge based business start-ups. The EXIST program line “**Gründungskultur - Culture of Entrepreneurship**” supports projects at universities to build up an infrastructure for providing skills and support for technology and knowledge-based innovative ventures.

Key data

- 6.6 m € revenue from industry in 2013
- 160 start-ups founded since 2000, nearly 80 % of them are still successful on the market
- Average of 50 start-up project ideas per year evaluated
- 87 patent applications in 2013
- 407 patent families
- 193 patent exploitations
- 144 licensing agreements (software, know-how, materials)
- 1m € licence income in 2013
- 300 collaborative projects with industry in 2013

A large solar catamaran, the MS Türanor PlanetSolar, is shown on the water in the foreground. The boat is white with blue accents and has solar panels covering its deck. It is moving towards the right, leaving a wake. In the background, the Statue of Liberty stands on a small island, surrounded by trees and a stone wall. The sky is clear and blue.

UNIVERSITY

*MS Türanor PlanetSolar,
the largest solar catamaran ever built,
during the DeepWater expedition
co-organized by
the University of Geneva.*



OF GENEVA

UNITEC – Office of Technology Transfer of the University of Geneva

Since its inception, the technology transfer office, Unitec, has demonstrated an instrumental role in transferring technologies from the laboratory towards the marketplace by working with start-up companies as well as existing companies in Switzerland, Europe and the rest of the world.

Mission

Promote and facilitate the transfer of academic research for society's use and benefit

Objectives

- Identify promising new technologies
- Finance proof of concept studies
- Manage intellectual property
- Define and implement marketing strategies
- Negotiate license and collaboration agreements
- Support the creation of spin-offs

To reach these objectives, Unitec can count on a multidisciplinary team with extensive experience in Industrial Partnerships and Technology Transfer including the creation and funding of start-ups.

Contact details:

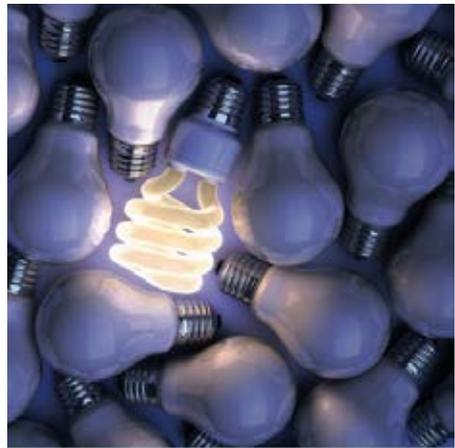
unitec@unige.ch / +41 22 379 03 50

Recent Highlights

- **5** international delegations interested to learn more about the activities deployed by Unitec were hosted. They could also get more information on the support for innovation and entrepreneurship of the University.
- **6** events assembling in total more than 1'500 participants were organized by Unitec in Geneva. Among them , a week-long serie of seminars , workshops around entrepreneurship for students was deemed the largest event in Switzerland on this subject.
- **7** international expert groups (among them the European Patent Office-Münich, Institut Pasteur-Paris and Cancéropôle –Lyon) requested the support from Unitec staff to join their pool of experts to evaluate the commercial potential of research results and provide to selected academic groups translational research grants.

- **8** international conferences on technology transfer and innovation featured a member of Unitec's staff as invited speaker.

Together, these statistics indicates the recognition, in Switzerland and abroad, of the expertise and skills of the technology transfer office of the University of Geneva.



UNIVERSITÉ DE GENÈVE

Boost your innovation
Technology Transfer
at the University of Geneva

Key data

- > 300 million euros raised by University of Geneva spin-offs in the last 10 years
- > 450 patent families managed
- > 120 licenses active
- > 40% of conversion rate of invention disclosures in licenses since inception (benchmark 41% Stanford University)

UNIVERSITÄT HEIDELBERG

As a classic comprehensive university, Heidelberg University has a broad understanding of social and technical innovation and sees itself as a driving force of society. Knowledge exchange, regardless of the subject it concerns, is always about converting knowledge into action and finding suitable forms of cooperation with partners from industry and society. It is our vision to be a reliable and innovative partner in the long-term development of our society.

Towards a knowledge-based society – A social and learning environment for children, students and adults: the University provides a wide range of programmes to foster the regional transformation process towards a knowledge-based society. The Young University initiative aims to interest children in research, offering programmes and activities that reach more than 12,000 children and teenagers every year. With more than 30,000 students, the University plays an important role in educating the next generation of high potentials. Working adults interested in extending their professional knowledge and skills benefit from the wide range of advanced training courses offered in Heidelberg and abroad (Chile). The general public appreciates the broad variety of open lectures, the academic lunch break, exhibitions and other activities. Furthermore the lifelong learning process is supported for older citizens with special courses.

Towards a cooperative regional development – Several cluster initiatives and Industry on Campus projects are the University's vanguard in carrying out new science-driven projects with partners throughout the region. Close and long-term cooperation research partnerships investigating subjects such as catalysis or image processing have been developed carefully and impress with strong performance. Whether the subject is biotechnology, medical engineering or organic electronics – in each case we work with our industrial partners to build value added chains from basic research and development all the way to implementation. This will be an ongoing process for many years to come.

Towards an innovative and sustainable living environment – Finding answers to the great challenges of our changing economy, society and environment requires young and innovative minds and ideas. To support them, we encourage the application of the social and technological expertise characteristic of a comprehensive university in an entrepreneurial environment. With services like Patent Management or Start-up Management, and with the help of local partners such as the Technology Park, the University creates space and opportunities to transform ideas and research into products and social return on investment.

Recent Highlights

1. Atlantis! How do we deal with natural disasters? These and many other questions will be answered by several exhibitions in various museums in the Rhine-Neckar region and beyond. The University works in concert with the curators of the museums to share the latest scientific results directly with the public and add to our cultural knowledge. It also gives students the chance to get hands-on experience in their subjects and promotes the development of interdisciplinary skills.
2. The "Young University" programme uses the latest scientific findings to deal with problems such as lack of exercise, the language barrier, ADHD and others. The programme's teaching and training approach to keeping children exercising is being adopted in schools and associations in Germany and abroad. Language problems are tackled on a regional level while suitable ways of helping children with ADHD are still being developed. The University has also formed an ESD (Education for Sustainable Development) alliance with schools in order to work on environmental topics and sustainability.
3. The University decided to establish the field of organic electronics as a



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Patent Management:

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Start-up Management:

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- lighthouse project in the cooperation between research institutions and industry. The aim of the consortium is to develop the full value chain from groundbreaking research to industry applications. To this end, the University made the strategic decision to build a new scientific Centre for Advanced Materials (CAM), while the industrial partners support the University's business incubator Innovation Lab (IL).
4. Developing the operating room of the future is the objective of the Industry on Campus project "Mannheim Molecular Intervention Environment (M2OLIE)". The cooperating partners aim to develop all necessary tools for the diagnosis and treatment of cancer on a molecular level. New and innovative assessments, procedures and treatment methods will be explored in a brand new intervention room.
 5. For 30 years, Heidelberg University and Technology Park Heidelberg have been joining forces to support the technology transfer from groundbreaking research to successful business applications and products. Heidelberg Startup Partners was founded to foster the entrepreneurial spirit of the research community in Heidelberg. In addition to the University and the Technology Park, members include all well-known research facilities in the area, such as the German Cancer Research Center, the European Molecular Biology Laboratory or Heidelberg University Medical Centre.
 6. One of the University's highly promising spin-offs is EXTOLL, which originated at the Institute of Computer Engineering. The company offers solutions to all users of high-performance computers whose applications are currently encumbered by long waiting times or a lack of scalability or power. EXTOLL provides an innovative communication solution that reduces waiting times to a minimum and avoids costly and power-hungry external switches. Founded in 2011 with the help of public grants, the company won a very prestigious business plan competition in 2012 and has found several well-known investors to boost its performance.

Key data

- 3 Industry on Campus projects
- 4 regional clusters science/industry
- >20 spin-offs since 2002
- 146 industry-financed PhD students
- >500 patents / 200 patent families
- >55 million EUR in private third-party funding per year
- 850 participants in advanced training courses
- 13,000 children and teens reached with our "Young University" programme per year

UNIVERSITY OF HELSINKI

Our goal is to develop solutions for global challenges and to commercialise and promote practical and effective use of new knowledge and research results for the benefit of society at large.



Let's make ideas fly!

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Key data

- Portfolio of 20 startup companies
- Two exits in 2012
- 56 invention disclosures in 2013
- 5 patent applications in 2013
- 11 patent families
- 32 courses offered in entrepreneurship





University's Research Affairs and Helsinki Innovation Services

Intelligent activities, practical resources

We are specialised in all business and innovation-related consulting from evaluation to funding and intellectual property protection to business planning. We provide guidance and services at all stages, as well as assistance in negotiations with customers or partners.

University's Research Affairs provides competences as regards the societal impact of research and supports research teams in collaboration with industry and commerce.

Helsinki Innovation Services is a one-stop-shop for commercialising innovations for the University of Helsinki. Our goal is to identify and evaluate commercially viable research results and to turn them into profitable startups or out-licensing opportunities. Helsinki Innovation Services Ltd is fully owned by the University of Helsinki.

Helsinki Think Co

Concept for student and researcher-driven entrepreneurship in co-operation with the City of Helsinki.

ThinkCo increases entrepreneurial mindset and spirit at the University of Helsinki and enhances entrepreneurship among students and researchers.

We activate dialogue and partnership between students, scientists and business, help to exploit the innovation potential to create business, entrepreneurship projects and growth companies.

<http://blogs.helsinki.fi/helsinkithinkcompany>

Recent Highlights

Record funding for the 3i project

Tekes, the Finnish Funding Agency for Technology and Innovation, awarded a record amount of 11.9 million euros funding for pharmaceutical and stem cell research in brain diseases and heart damage. Our experts help to expand the commercial potential and development opportunities of the team's research.

Intel and Helsinki University established a new mobile security institute

The new institute is based at the University of Helsinki and located in the Helsinki Institute of Information Technology HIIT. Researchers from the Secure Systems research group at the Department of Computer Science at the University of Helsinki.

Space sailing soon

Using ultrasonic welding, the Electronics Research Laboratory at the University of Helsinki successfully produced a 1 km long ESAIL tether in 2013. The electric sail (ESAIL), invented at the Finnish Kumpula Space Centre in 2006, produces propulsion power for a spacecraft by utilizing the solar wind. The sail features electrically charged long and thin metal tethers that interact with the solar wind.

PULS helps to prevent global epidemics

News media monitoring equipment PULS tracks online news sources for global epidemic surveillance. The system helps Health Organizations to react on infectious diseases on time and to stop them from spreading.

Platform for collective video stories

The MoViE platform was designed for the creation of collective video stories for educational purposes. Pupils can use MoViE to shoot and edit videos on topics relevant to school subjects together with other pupils from across the world. Besides its educational potential, the innovation has drawn wide attention in China, where it may be used to record the experiences of the ageing population.

New approaches to treat brain and spinal cord injuries

The neuroscience research project seeks new therapies for brain and spinal cord injuries. The project is currently developing a molecule to promote recovery from brain or spinal cord trauma and to help prevent the subsequent paralysis.

Vast marketing potential in macromolecular crystallography

Innovation leads to the use of protein structure determination in new fields, including bulk chemicals, the agribusiness and enzyme chemistry industries, in addition to the traditional big Pharma. Commercial avenues for exploitation include licensing and spin-off creation with fee-for-service and internal portfolio generation.

The University and Entrepreneurs

Think Africa Week is so far the biggest event organised by students at Helsinki Think Company. The idea behind Think Co and Think Africa is to blend people from various backgrounds and to let them challenge and learn from each other – and to create completely new ideas and business proposals.



UNIVERSITEIT LEIDEN

Leiden University and Leiden University Medical Centre

About Leiden University Research and Innovation Services (LURIS)

Vision:

- To establish Leiden as a pre-eminent “entrepreneurial University”;
- Ensure wider social benefit is enjoyed from utilisation of the research base in clinical, cultural, social and technological areas;
- Contribute to and facilitate international recognition of the Leiden region as a leading centre in entrepreneurial activity

In establishing the central support office LURIS in 2006 to promote the development and exploitation of research outputs from the Leiden academic centres, several objectives were identified and have been further implemented and developed since then:

Objectives:

1. Infrastructure for handling Technology Transfer (office/people/records/culture/policies);
2. Balance interests of the research centres in core activities (publishing and research while maintaining its IP asset base);
3. Contribute to regional development (Leiden BioScience Park/Medical Delta/strategic allies);
4. Environment to incubate new technology (Proof of Concept funds/Holding companies/ investment partners);
5. Communicate success and enhance international profile of Leiden researchers and their output.

LURIS and Technology Transfer

A team of experienced business developers and legal experts work together with the scientists to identify potentially interesting results which could have application in the outside world and set up partnerships to promote them.

LURIS and Research Support

Strategic insight into complex funding arenas such as EU, NIH or Dutch national subsidy programmes is provided by the research development team offering advice and support to identify and apply for external funding subsidies. This includes training, networking and long term strategy support.

LURIS and Entrepreneurial Activity

In addition to proactively seeking to develop Leiden IP via external VC invest-

ment (setting up new companies) there is a broader support for all kinds of entrepreneurial activity. From providing teaching input and internships for educational programmes such as Science Based Business in Leiden, postgraduate programmes or with academic partners in Delft or Rotterdam, the practical skills and experience of staff in LURIS are shared with potential and actual entrepreneurs, including student entrepreneurs.

Infrastructure and Technology Transfer:

1. dedicated technology transfer office established, with 25 FTEs including legal, business and scientific expertise(>550 new technologies identified since 2006, with over 150 outlicensed; around 180 patent families currently being managed;
2. Over 2500 formal agreements established since 2006 with third parties to promote collaborations;
3. Over €1.5 million Proof of concept funding awarded; Local valorisation funding allocated and early stage VC fund established with private sector partners (totalling funds in excess of €20million).
4. active relationships with over 30 spin-out companies thriving on technologies outlicensed within the past decade, with 10 new high technology companies having been created since 2008



LURIS

Recent Highlights

Development Funding: in establishing BioGeneration Ventures and other development funds Leiden has contributed to the securing of in excess of 20million to support directly the development of early stage technologies, particularly in the life science sector

Regional Development :

- Strategic successful regional networks such as Medical Delta(established in 2007 to promote research and industrial interaction with Delft and Rotterdam university and medical centres) as well as a space cluster combining excellent research capacity in Leiden University with nearby European Space Agency facility at Noordwijk.
- Strong interaction with the top Dutch life science cluster namely Leiden Bio-Science Park with over 90 companies has been part of the Leiden culture for almost 30 years
- Strategic partnerships with city council to promote research and impact of science from Leiden have resulted in exciting infrastructure and other direct economic benefits to the community (see Biggar Economic Impact Reports of 2011 and 2013).

Scientific breakthroughs: exciting medical developments for the treatment of rare diseases continue to enhance Leiden's reputation as a centre of global expertise in the realm of exon skipping-with progressive new medical approaches be-

ing trialled by Prosensa, an established local spinout company, for fatal genetic diseases.

In this era of zero animal testing, the challenges of developing novel products for use with human skin are being addressed ingeniously thanks to the department of Dermatology at LUMC which has developed huge expertise in the creation of effective skin models. These are sought after by researchers and industrial partners alike, such that an Asian company was attracted to establish a European company in Leiden , to help make this technology globally available.

Statistical Software (SPSS) used around the world every day benefits from longstanding alliances with Leiden researchers whose programming output has been licensed to IBM, generating income and maintaining a vital link for the outside world to benefit from the insights of academic researchers.

International Profiling and Strategic Partnerships

Leiden Global launched in 2013 which showcases expertise available in Humanities and Social Sciences to the global community.

Regions of Knowledge Project "Health Ties" has created a trans-European network of leading medical research centres, resulting in both clinical and valorisation impact.

<http://www.healthties.eu/>

Alliances with the international space community are promoted through the Leiden co-ordinated NOVA consortium, combining the Dutch astronomy centres in the development of instrumentation as well as carrying out research.

A truly pan- global connectivity of the Leiden research base is continually developing, in addition to the traditional European and American alliances with strong innovative alliances in Asia, with Chinese, Taiwanese, Japanese and Singapore companies and institutions.

Campus The Hague: Internationally oriented safety and security cluster, including terrorism and its Centre for Innovation living lab: for co-creation and integrating research and innovation processes.

Research Facilities:

- The Cell Observatory: offering state of the art facilities to multidisciplinary local and national partners from industry and academia to visualize and comprehend the dynamics of the living cell down to the molecular level; and it also hosts The Netherlands Centre for Electron Nanoscopy (NeCEN), a consortium offering a unique combination of two different types of cryo-transmission electron microscopes.
- BioPartner Incubators: incubator facilities on campus for new companies.



KU Leuven Research & Development

A long tradition of fostering innovation and high-tech entrepreneurship

KU Leuven Research & Development (LRD) was established in 1972 as one of the first technology transfer offices in Europe. Over the last 42 years, LRD has developed a tradition of collaborating with industry, securing and licensing intellectual property rights, and creating spin-off companies. LRD is dedicated to building bridges between science and industry, and to transferring knowledge and technologies to the marketplace. LRD consists of a multidisciplinary team of over 80 experts who guide researchers in their interactions with industry and society, and provide support for the exploitation of their research results.

lrld@kuleuven.be

Providing access to incubation and seed financing

Within the university structure, a unique decision and incentive mechanism has been implemented. Researchers can form LRD research divisions, through which they can manage their technology transfer activities in an autonomous but supported way, and foster innovation and entrepreneurship in combination with high-level research and education. These LRD research divisions stimulate interdisciplinary collaborations by allowing researchers to cooperate across the boundaries of departments and faculties.

LRD has created several specialised incubation instruments in order to meet the need for financing projects at an early stage of development. KU Leuven's Gemma Frisius Fund stimulates the creation and growth of KU Leuven spin-off companies. Over the years, this seed capital fund has invested € 26 million in KU Leuven spin-off companies.

In 2006, LRD and the European Investment Fund set up the Centre for Drug Design and Discovery (CD3), a technology transfer platform and investment fund for small molecule drug discovery and target validation. CD3 provides drug discovery expertise and scientific support, as well as financial support, to academic research groups and small (spin-off) companies. Together with five other top translational health research centres, CD3 has formed a Global Alliance of Leading Drug Discovery and Development Centres.

The aim of this alliance is to strengthen the international academic drug development and commercialization network to ultimately improve the rate at which academic research is translated into new medicines.

Together, they represent close to 400 experienced drug developers collaborating with tens of thousands of academic scientists around the globe on over 165 highly innovative therapeutic projects targeting significant unmet medical needs.

cd3@kuleuven.be

Stimulating and cultivating knowledge-driven regional development

In close collaboration with the city of Leuven, the province of Vlaams-Brabant, and the Flemish and European authorities, LRD actively supports the development of a favourable climate for knowledge-driven entrepreneurship and innovation. In particular, LRD is an active partner in setting up networking initiatives such as Leuven.Inc, the network for high-tech entrepreneurship which was established in 1999, and technology clusters such as DSP Valley and LSEC, which focus on digital signal processing and IT security respectively. Together with Leuven.Inc, LRD organises specialised practice based training sessions and creates awareness regarding innovation management and entrepreneurship. info@leuveninc.com

More info on

lrld.kuleuven.be/en



Recent Highlights

100th spin-off

In 2013, KU Leuven launched its 100th spin-off company. The KU Leuven spin-off companies directly employ more than 3,500 people. In the period from 2005 to 2013, KU Leuven invested 8 million euro in its spin-off companies, and 679 million euro of external capital was raised.

Wellcome Trust, KU Leuven and Janssen join forces to combat dengue fever

KU Leuven researchers are collaborating with Janssen Pharmaceuticals Inc. and the Wellcome Trust to discover and develop candidate antiviral drugs for the prevention and treatment of dengue virus infections. The collaboration builds on an existing three-year drug discovery programme at the Rega Institute and the Centre for Drug Design and Discovery (CD3) at KU Leuven, supported by a Wellcome Trust Seeding Drug Discovery Award. This effort resulted in the identification of a series of chemical compounds that are highly potent inhibitors of dengue virus replication.

A new European hub for high quality drug discovery research services

In January 2014, Lead Discovery Center (Max Planck), Centre for Drug Design and Discovery (KU Leuven) and Axxam launched the new joint venture organisation Hit Discovery Constance GmbH (HDC). HDC is a service oriented company which provides high quality drug discovery research services to the life science industry and academic or research institutions. HDC's labs are equipped with three state-of-the-art screening stations and a screening collection of 240,000 compounds, and offer a REMP-based compound storage & handling facility which allows for high quality storage and high throughput compound picking activities. Combined with Axxam's already established HTS services and compound storage facilities, HDC represents one of the largest screening hubs worldwide.

One of the most prolific FP7 participants

KU Leuven is among the most prolific participants in the European Commission's Seventh Framework Programme (FP7), with 543 approved projects worth 253 million euro since the beginning of FP7 in 2006. This figure includes prestigious ERC grants awarded to 69 KU Leuven researchers.

KU LEUVEN

Key data

- 112 million euro income from research collaboration
- 1,563 new collaborative research agreements
- 584 active patent families
- 72 million euro license-income
- 102 spin-off companies started





IMPERIAL COLLEGE LONDON

Imperial College London strives to make a demonstrable economic and social impact through the translation of research into practice worldwide. The founding mission of Imperial is to deliver world-class scholarship, education and research in science, engineering, medicine and business, with application in industry, commerce and healthcare.

Imperial's Enterprise and Innovation agenda is led by Prof David Gann CBE, Vice President – Development and Innovation and Dr Simon Hepworth, Head and Director of Corporate Partnerships.

Imperial Consultants Ltd – facilitating consulting

imperial-consultants.co.uk

Founded in 1990, Imperial Consultants Ltd is a wholly-owned subsidiary company connecting external organisations with the College's academics and research facilities. It provides financial, contractual and administrative support in order to facilitate services such as technical advice, expert witnesses and testing, measurement and analysis.

Corporate Partnerships – connecting researchers and industry

imperial.ac.uk/corporatepartnerships

The Corporate Partnerships team works across College to build close relationships with industry in order to develop collaborations of mutual interest, with real industrial relevance. Within Corporate Partnerships, the Enterprise Ventures group provides commercial intellect on the structuring and operation of formal academic and business joint ventures.

Imperial Business Partners – sharing insight on collaboration, innovation, technology and skills

imperial.ac.uk/imperialbusinesspartners

The Imperial Business Partners membership forum brings together board-level executives from companies with a strong interest in research, innovation and talent, to improve links, understanding and insight. The members engage with influential policy-makers, technology pace-setters and industry leaders to tackle shared strategic issues through open and thought-provoking dialogue. The annual bespoke Tech Foresight conference challenges visionary Imperial academics to project how their research could impact society in 20 years time.

Imperial Innovations Group plc – technology transfer

imperialinnovations.co.uk

Founded by the College in 1986 and floated on the London Stock Exchange in 2006, the Group is responsible for IP protection, licensing and new venture creation. Since listing, Innovations has invested a total of £161 million across its portfolio companies, which have raised collectively investment of over £750 million to date.

Incubation and acceleration – supporting small businesses

imperialinnovations.co.uk/ventures/incubator
thinkspacelondon.com

Imperial offers the largest concentration of Technology and Commercialisation facilities in London, with premier office, laboratory and workshop space over two sites. Designed to accommodate a company's growth from early-stage through to maturity, the incubators offer co-location with Imperial researchers. Imperial

Innovations provides incubation support to the South Kensington site, which hosts early-stage companies. Imperial College ThinkSpace manages the incubation facilities at Imperial's new c.25-acre West London campus: Imperial West.

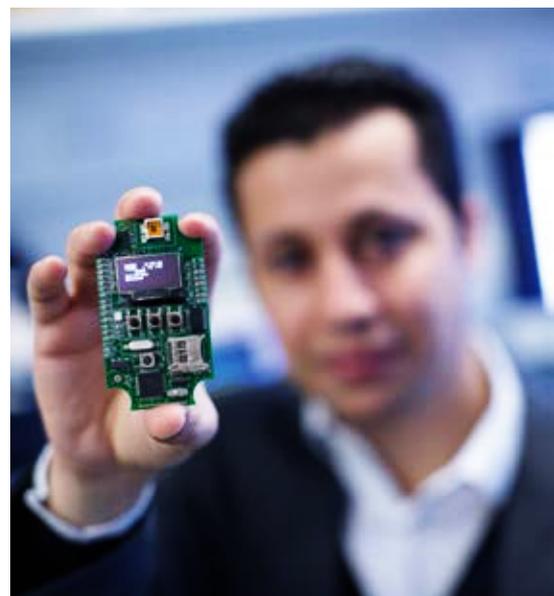
Enterprise Education – fostering entrepreneurship

imperialcreatelab.com

imperial.ac.uk/designengineering

imperial.ac.uk/business-school/research/innovation-and-entrepreneurship

Enterprise education is embedded throughout the College's Faculties, Departments, Centres and Institutes, and delivered centrally through three dedicated platforms: Create Lab reaches out to support innovative and entrepreneurial students from all disciplines; the Design Engineering Group provides expertise and facilities to support the design and creativity process; and the Entrepreneurship Hub brings together interests in innovation, entrepreneurship and design, within the Business School's world-class Innovation and Entrepreneurship research group.



As part of the Rio Tinto Sports Innovation Challenge students developed a new type of handlebar, which was road tested by Paralympic cyclist Jon-Allan Butterworth.

© Imperial College London / Thomas Angus



Recent Highlights

Tackling global climate change

The Qatar Carbonates and Carbon Storage Research Centre is part of a US\$70 million, 10-year research partnership between Shell, Qatar Petroleum, Qatar Science and Technology Park and Imperial. It is the world's largest suite of laboratories researching the storage of carbon dioxide in carbonate rock formations. Research in these areas is crucial to reducing carbon dioxide emissions and mitigating climate change.

Translating Synthetic Biology research

The Synthetic Biology Innovation and Commercialisation Industrial Translation Engine (SynbiCITE) is a major project launched in 2013 to accelerate the translation of synthetic biology technology to new applications, and support small to medium sized UK companies (including start-ups) in synthetic biology. It is supported with £24 million from UK Government and private industry, including Microsoft, Shell and GlaxoSmithKline.

Next generation robotics

Dyson has invested £5 million into a joint 5-year robotics lab with Imperial, from 2014. The research will focus on vision systems, leading to new robotic capabilities,

creating a generation of robots that understand the world around them and can intelligently interact as it changes.

Novel immunotherapies

Circassia Pharmaceuticals plc is a clinical-stage specialty biopharmaceutical company focused on the development and commercialisation of a range of novel immunotherapy products for the long-term treatment of common allergies. Founded by Imperial researchers, it is focused on controlling immune system responses such as allergies to cat dander and house dust mites. The company was established in 2006 and is in phase 3 trials for its cat allergy treatment. In March 2014, it floated on the main market of the London Stock Exchange, raising £200m in the biggest UK biotech float for over a decade. Imperial Innovations had invested £25.5m in Circassia since its launch.

Imperial West: Open for business

imperial.ac.uk/imperialwest

Imperial is developing a new c.25-acre campus three miles from South Kensington, in West London. The Imperial West innovation and translation district represents a bold vision; a long-term \$5bn, 15-year development programme.

Researchers, industry partners, SMEs and start-ups will co-locate at Imperial West on a scale that is unprecedented anywhere in the world, reinforcing London's position as a catalyst for scientific development and economic growth. There, thousands of next generation thinkers will translate and commercialise cutting-edge research for the benefit of our economy and society as they develop exciting new products and services. Imperial is actively seeking enquiries from technology-focused companies interested in co-location and collaboration opportunities.

Manufacturing aircraft of the future

In 2012 Aviation Industry Corporation of China (AVIC) established a £5 million partnership with Imperial to develop the next generation of passenger aircraft. It is one of the few research centres to be funded outside China, and focuses on advanced materials, design and manufacturing processes.

**Imperial College
London**

Key data

- £26 million turnover of Imperial Consultants for 2012-13
- £46.4 million direct research funding from industry in 2012-13
- c.200 PhD students supported by industry
- £161 million invested in start-ups by Imperial Innovations since float
- £0.75 billion funds raised by portfolio of spinouts since 2006
- 1000+ jobs created by spinouts
- 140 College spinouts formed to date
- 400+ start-ups founded by alumni
- 350 annual invention disclosures from academics
- 650 patents filed to date

Dr Georgiou's research involves the application of microelectronic technology to create novel medical devices. He has developed a Wellcome Trust funded bio-inspired artificial pancreas, which aims to improve the treatment of patients suffering from Type 1 diabetes.

www.imperialinnovations.co.uk/technology-transfer/case-studies/pantelis-georgiou/



UNIVERSITY COLLEGE LONDON

About UCL Enterprise

Vision: To establish UCL as a global leader in enterprise and innovation for the social and economic benefit of UCL and the UK

In order to deliver this vision we will develop a transformative agenda to establish:

- UCL as a leading university supporting entrepreneurship and innovation;
- A far-reaching and diverse range of innovative enterprise activities;
- An extensive portfolio of collaborative relationships with commercial and social enterprises;

Enterprise at UCL includes the following activities: education and training in entrepreneurship; industrially-related and translational research; social entrepreneurship; commercial contracts and services including consultancy and executive / continuing education; commercialization of intellectual property and the creation of new business ventures.

UCL Enterprise – Professor Stephen Caddick, Vice Provost Enterprise provides leadership for UCL's enterprise agenda, which is supported through:

UCL Advances – supporting entrepreneurs and small businesses

Offering training, networking and business support for staff, students and external entrepreneurs to encourage and enable new enterprises to get going. Its primary role is to promote a culture of entrepreneurship on campus and engagement with entrepreneurs and small businesses beyond UCL's boundaries and currently delivers over 30 activity programme.

advances@ucl.ac.uk

UCL Business – technology transfer

UCLB has a track record of identifying and protecting promising technologies and innovations from UCL. It invests directly in development projects to maximise the potential of the research and manages the commercialization process of technologies from the lab to the market..

info@uclb.com

UCL Consultants – facilitating consultancy

Drawing on world-class expertise from 4,000 academic staff at UCL across a wide range of disciplines, UCLC offers a one-stop office for academics seeking to carry out consultancy and to enable external clients to access the UCL community. A



full service is provided including contracting, tendering, administrative support and project management.

info@uclconsultants.com

Recent Highlights

The heart of London's small business community

UCL centre for entrepreneurship, UCL Advances offers more than 30 programmes of activity with more than 34,000 student learner hours of training and support for 300 of London's small business community. One of the key programmes is the Goldman Sachs 10,000 small business programme is designed for the leaders of established small businesses who have the appetite and potential to grow their enterprises. Participants benefit from a high quality, comprehensive package of support and expertise to help them take their businesses to the next level.

Transferring technology for human health

Haemophilia is an attractive target for gene therapy as factor levels in the blood serve as good biomarkers, relatively low factor levels are required for a clinically important benefit in severe patients and the current standard of care of intravenous infusions

three times a week is quite onerous. In 2013 UCL Business licensed a Factor VIII gene therapy program for haemophilia A to BioMarin Pharmaceuticals Inc (BMRN) using the research from Professor Amit Nathwani and his team at UCL and St. Jude Children's Research Hospital.

A truly international internet

In 2012 UCL signed a ground breaking agreement to enable internet users to create full web addresses using non-Latin script names. ICANN – the Internet Corporation for Assigned Names and Numbers, which coordinates the Internet's addressing system – has initiated the change, which has opened up an entirely new way of using the Internet. UCL is working with ICANN to evaluate applications for new generic Top Level Domain addresses. As a result of the New generic Top Level Domain Program there will be new addresses in non-Latin script based scripts such as Arabic, Chinese, Hindi, Japanese and Russian.

A new Idea for Partnerships and Innovation in London

UCL has many partnerships with organisations large and small but in 2012 we announced an innovative new approach to partnerships. Working with Tech Giant Cisco and media group DC Thomson, UCL founded IDEALondon. Opened in 2013 by

the British Prime Minister, IdeaLondon is an innovation hothouse in the heart of London's Tech City. It is a collaboration space for small businesses and provides resources for high growth potential businesses to collaborate and grow.



Key data

- 100m Enterprise related income in 2012
- 1000 Consultancy projects to date
- 1500 Patents in >300 patent families
- 40 Courses offered in business support services & schemes
- 300 PhD students supported by industry

LUND UNIVERSITY

LU Innovation System

The Link Between Academia and Business

About LU Innovation System

LU Innovation System is Lund University's combined unit for innovation and commercialisation. With our help, valuable knowledge from Lund University is converted into new companies or licences on the market. LU Innovation System is the link between academia and business. Linus Wiebe is Innovation Director at Lund University and CEO for LU Innovation System AB.

With the university's collected knowledge as a foundation, LU Innovation System helps integrate research, innovation and enterprise to increase growth and create conditions to improve health, the environment and society. From having previously been two separate organisations, the university's innovation system now works as one single unit. This means that, operationally, the holding company forms part of the work of the government authority to put innovations onto the market. A united working process and shared aims creates a clearer and more efficient organisation that can more easily reach researchers and other stakeholders. One unique thing in Sweden is that teachers and researchers are the sole owners of the intellectual property of their work. It puts a lot of responsibility on the researcher to commercialize the results.

Business development

LU Innovation System's main service is business advice. A lot of the work takes place at a very early stage, when the research is still ongoing and before an idea that is suitable for commercialisation has really been developed. LU Innovation System today has eight business develop-



ers and four trainees who actively guide researchers and students through the commercialisation process. Three of our business developers are integrated into strategic research environments and have their main base there. The business developers look at the commercial potential of ideas and what can and should be done to proceed with commercialisation. LU Innovation System's business developers also help to find complementary expertise that can support the work on a project.

Patents

LU Innovation System has two intellectual property (IP) specialists who help researchers and students protect their ideas. The IP specialists help investigate whether it is possible to protect the idea or the research findings, and offer advice and assistance on the patent application process, as well as research applications.

Company formation

Once a company is formed and the focus switches towards growing the company, the project has reached a decisive point. In order to give the company a secure start on its journey, we offer active involvement in the form of project management or board expertise, where our focus is on growing the company and ensuring its continuation.

For the first two years, we also offer help with financial accounting and initial graphic material. In addition to the operational involvement, having us as a part-owner provides both credibility and weight – a valuable strength, not least when contacting investors and cooperation partners.

In some cases we assist the academic in-

ventors in obtaining licensing deals. In this case we take a certain percentage of the payment from the licensing deal including down payments, milestones, royalties etc. Any profit made when selling our shares or receiving revenue from licensing deals is used to support new commercialisation projects.

More info:

www.innovation.lu.se
info@innovation.lu.se

Recent Highlights

Student

Leapfrogs initiative, where students are given the opportunity to develop their business ideas. Within Leapfrogs, students can apply for financial support equivalent to three months of student finance in order to work full-time on their projects and test the viability of their ideas.

LU Innovation System works actively with VentureLab to reach out to students with inspiration, advice and incubator spaces. VentureLab is run by the School of Economics and Management but is co-funded by all faculties at Lund University and LU Innovation System, and is open to all students at the university.



LUND
UNIVERSITY

Research in environments – driving innovation in strategic research areas

A programme to promote innovation at Lund University Diabetes Centre (LUDC) was initiated three years ago with funding from the European Regional Development Fund. The goal was to increase innovation interest and output from one of Lund University's strategic research areas (SRA). In 2013 Lund University decided to expand the programme to other SRAs in order to support them in their innovation activities. We are now in the process of developing this initiative further and expand into other research areas. Business developers are today present at Lund University Diabetes Centre, Multipark and at new cancer center at Medicon Village (Create Health and Biocare).

Innovationskontor Syd - enhancing innovation by diversity

Innovationskontor Syd (Innovation Office South), initiated by Lund University in the spring of 2010, is an innovation platform for collaboration between the five higher education institutions in southern Sweden (Blekinge Institute of Technology, Kristianstad University, Lund University, Malmö University and the Swedish University of Agricultural Sciences in Alnarp). Its objective is to increase the utilisation and commercialisation of research-based ideas, spurred by business coaching and financial investments.

New companies

LU Innovation System AB currently hold equity in 45 spin-out companies. In 2013 the following five companies have been added to the holding company's portfolio; CTrap, Viscosens, BIBBINstruments, Cognibotics and Take Good Care Communications.

LU Innovation Systems in figures

Pipeline

	2010	2011	2012	2013
Company equity	7	8	6	5
Company formations	16	16	16	14
Patent applications*	19	23	22	27
Commercialisation projects	43	55	70	56
Ideas	80	79	104	110
* of which PCT applications	4	9	6	7

Ideas: The number of identified ideas where a first initial evaluation indicates it is worth pursuing.

Commercialisation projects: The number of ideas that have at some point throughout the year been worked on actively.

Patent applications: The number of patents filed, including PCT applications based on earlier priority.

Company formations: The number of companies formed from the commercialisation projects being worked on by LU Innovation System.

Company equity: The number of companies where LU Innovation System AB has taken an equity share.

Accumulated growth (LU innovation system's portfolio companies 1999–2012)

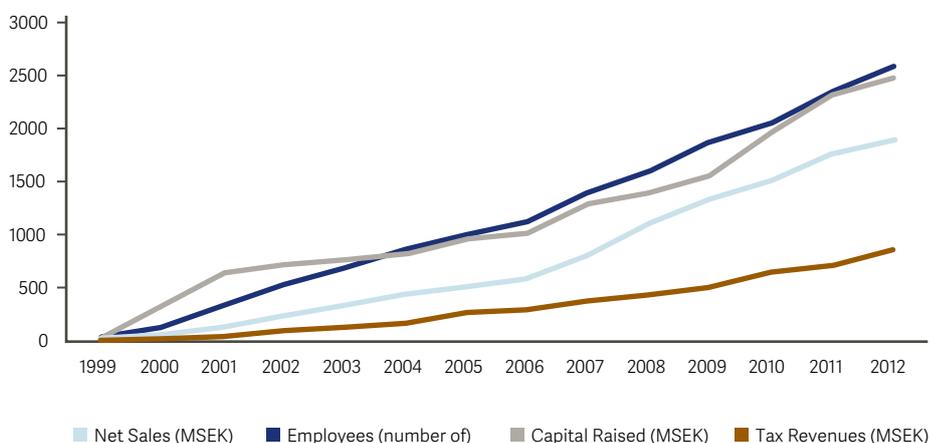


Figure shows the combined, accumulated figures for all companies where LU Innovation System has held equity over the years. What can be seen is that over the last thirteen years the companies where LU Innovation System has held equity have contributed to employment corresponding to approximately 2 500 man-years, raised approximately SEK 2,4 billion and had an accumulated turnover of approximately SEK 1,8 billion. The direct tax revenue accumulated over the years is around SEK 700 million.

Contact details:

Linus Wiebe

Director of Innovation and LU Innovation System
Lund University Innovation System
Phone +46 46-222 24 51,
Mob: + 46 73-345 24:40
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UNIVERSITY OF MILAN



UNIVERSITÀ
DEGLI STUDI
DI MILANO

Entrepreneurship and Innovation at the University of Milan

Besides its primary role as a teaching and a research entity, the University of Milan (UNIMI) has a wealth of skills and knowledge combined with a strong focus on technology transfer activity that make it an important reference point for businesses as well. An increasing number of companies is turning to the University of Milan, commissioning research studies and requesting consulting services in the most diverse areas of knowledge. Companies also collaborate with the University by offering internships in specific professional fields.

Furthermore, UNIMI, aware of its generalist vocation, supports the cross-fertilization and translation of the expertise of its researchers operating in different scientific fields in order to achieve innovative results and promote internal cooperation. UNIMI Innovation strategy is based on:

- **SENSITIZATION:** Disseminating IP culture within the University and encouraging high-tech entrepreneurship among the researchers to support the exploitation of innovative results and promote the academic system towards the business sector;
- **SCOUTING:** Shifting the attention to

exploitation from the end of activities (results) to the early stages of research (planning and contracts);

- **DEVELOPMENT:** Supporting the companies by providing tools and expertise to advance research results towards industrial applications;
- **COOPERATION:** Establishing relations with external entities – both public and private – and promoting a policy of cooperation for implementing common activities and sharing projects and competences.
- **PUBLIC ENGAGEMENT:** Performing activities aimed at realizing a beneficial social impact thanks to the spillover of academic knowledge to the public.

UNIMITT, the University Centre for Innovation and Technology Transfer appointed to support the knowledge transfer process, is operating in collaboration with the Research Services Division and the University Departments.

UNIMI operates through diverse, but strictly connected, functions:

- **Technology Transfer Activity:** Organising technology transfer and bringing inventions and know-how to market.
- **Industrial Liason Activity:** Establishing relations with external entities and promoting a policy of cooperation for

implementing common activities and sharing projects and competences.

- **Innovation & Science Policy Unit:** Developing competences and knowledge for interpreting the phenomena at stake, through studies, collaborations and analyses.

Contact details:

UNIMITT

unimitt@unimi.it,

Research Services Division

ricerca@unimi.it

Recent Highlights

Knowledge Transfer from Pharma to Agro-food fields: a model based on cooperation

UNIMI has an outstanding expertise in several scientific fields, as demonstrated by the several papers published every year and the strong scientific collaborations with national and international partners. From a knowledge transfer point of view, it is relevant to underline the strategic collaboration with public and private stakeholders in the innovation chain in order to accelerate the development and commercialization of products identified within the



Academia. A collaboration with an Italian Foundation financing the research on the GPR17 deorphanization to identify new targets for the cure of Multiple Sclerosis, for example, is aimed at overcoming the difficulties in the drug development process; the licensing of new catalysts free from noble metals to an industrial partner is fundamental for the scale up, the optimization and the commercialization of such products. Similarly, the strict collaboration between the Lombardy Region, the Academia and a University Spin-off has allowed the application of innovative methods to pathogens detection in plants, with benefits for the agricultural sector.

Collaborate to support Entrepreneurship, the Business accelerator of University

Born in 2008 through a public-private partnership between the University, Fondazione Cariplo and Intesa Sanpaolo Banking Group, Fondazione Filarete aims at: accelerating the time to market of academic research through effective technology transfer processes in the fields of Life Sciences, Biotechnology and Health, at encouraging the creation of new companies supporting them in their early stages and in business development, supporting the innovation processes of SMEs through value-added services and technology and knowledge transfer and developing partnerships and networks with scientific and clinical research institutes in Italy and abroad.

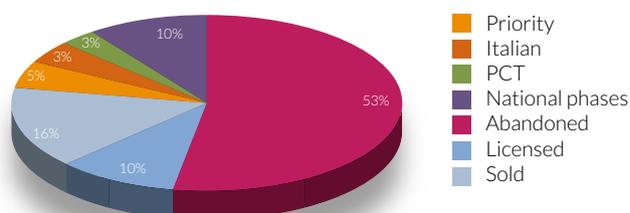
Start Cup Milano Lombardia: supporting innovative entrepreneurship

Start Cup Milano Lombardia is the business plan competition promoted by the system of Lombard universities (8) and incubators (5) coordinated by UNIMITT. The distinctive feature of the competition is the selection of entrepreneurial projects aimed at the creation of innovative startups within three different sectorial categories:

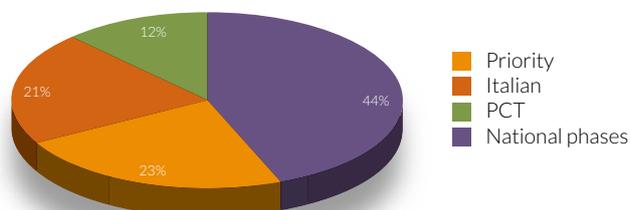
- Life Sciences (Biotech, Medical Devices, Pharmaceuticals) & Agro-food
- Clean & Industrial Technologies
- ICT & Services

In 2013, 90 Business plans, the majority in ICT & Services category, were submitted to the organizers.

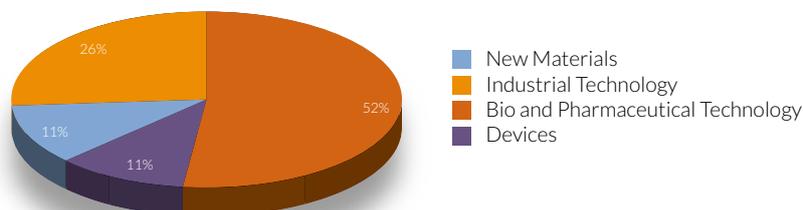
Patent Portfolio Composition



Active Patent Portfolio Composition



Spin off by area



Data refer to 31th January 2014

Key data

- 209 patent families - constant growth since 1992
- 26% of patents licensed or assigned
- 400 consultancy related to IP policy on projects
- 24 active spin-off companies
- € 8.428.805 deriving from 339 commissioned research contracts in 2011
- € 6.557.083 deriving from 319 commissioned research contracts in 2012
- € 7.672.256 deriving from 320 commissioned research contracts in 2013

About LMU's Office for Research and Technology Transfer

The Office for Research and Technology Transfer (Kontaktstelle für Forschungs- und Technologietransfer, KFT) initiates contacts and manages interactions between LMU and its partners in economy and society. Its main goal is to ensure the best possible exploitation of the knowledge resources generated by and available at LMU.

<http://www.lmu.de/kft>
kft@lmu.de

Research Marketing

The Research Marketing team acts as a bridge between the worlds of research and business. Its main goals are to maximize the translation potential of the excellent research carried out at LMU, using a range of customized support measures, and to prepare the ground for collaborative projects and cooperative ventures with suitable industrial partners. One significant component of the team's work is devoted to the initiation and expansion of strategic partnerships with commercial partners, with a view to building up a broad-based portfolio of externally funded commercial projects. In addition to providing individual advice regarding translation-related funding programs, the Research-Marketing team offers guidance on the implementation of targeted marketing strategies designed to facilitate the translation of research findings into marketable products.

forschungsmarketing@lmu.de

Patents and Licenses

The Patents and Licenses Team provides advice and assistance to LMU's researchers in all matters relating to the protec-

tion and transfer of intellectual property. These services include, above all, the evaluation of an innovation with respect to novelty, inventiveness and commercial potential, and the patent application and subsequent exploitation with a suitable industrial partner for commercial development. All modes of exploitation, including license agreements, option contracts and assignments to SMEs, spin-off companies or global players, can be validated and operated.

patente@lmu.de

Spin-off Service

The LMU Spin-off Service provides advice and support to students, graduates, academic staff and faculty members on setting up spin-off enterprises affiliated with the University. In addition to start-up consulting for aspiring entrepreneurs, the Spin-off Service offers training courses that deal with all stages of the start-up phase, from the development of the basic idea to the preparation of a business plan. It also gives guidance on sources of sponsorship and on how to approach potential investors.

spinoffservice@lmu.de

Congress Consultancy Service

The Congress Consultancy Service (CCS) advises LMU faculty and staff in matters relating to the planning, organization and realization of congresses, meetings and symposia. To this end, the team draws on a constantly expanding pool of practical knowledge in the area of event management and the acquisition and renegotiation of offers. It also offers assistance on questions of financing (in particular the procurement of third-party



funding). Since 2009, the CCS has also organized a biannual Congress Seminar for all staff members at LMU, which familiarizes participants with the know-how of event management.
kongressberatung@lmu.de

Recent Highlights

Cooperation agreement with Sanofi – a strategic partnership with wider implications

In association with its university hospital, LMU has established a strategic partnership with Sanofi in the field of clinical research and drug development. The agreement focuses on infectious diseases and illnesses such as diabetes and multiple sclerosis, and on translational technologies and models which permit rapid evaluation of the translatability of novel therapeutic approaches from bench to bedside.

Meet the Lab – Experience research live at LMU!

A novel format has been developed which is designed to demonstrate LMU's outstanding research strengths to selected industrial partners in a focused and effective

fashion, in the laboratories in which it is carried out. The combination of exclusive access to the laboratories with subject-specific lectures is expected to enhance the high-level transfer of knowledge between the University and industry, and thus improve the effectiveness of contacts on both sides.

Stimulating knowledge transfer to society at large

New challenges that face our society as a whole are generating a growing need for innovation. In order to stimulate the exchange of information, promote the integration of knowledge bases generated by academia, economy and society, and enhance the understanding of the mutual interactions between research and its practical application, LMU organizes symposia on societal innovations.

Workshops to be held during the symposia consider how the challenges with which society is confronted can be effectively met by innovation, and how the factors that best promote the implementation and adoption of such innovations can effectively be identified. The symposia not only target academic researchers from all German-speaking countries, but also address prominent societal organizations, associa-

tions, foundations and initiatives, as well as representatives of the business world.

Spin-offs based on LMU research and patents

Innovative, high-potential spin-off companies originating from ground-breaking research at LMU can call upon the expertise in Intellectual Property Rights available at LMU for help in commercializing their products and services. The highly effective combination of Spin-off Service and the team on Patents and Licenses can already point to a number of impressive successes. Only recently, MODAG GmbH, a company founded in 2013 with the aim of commercializing a drug candidate for the treatment of Parkinson's disease, was able to raise a total of nearly 8 million euros in venture capital and acquire licenses to important LMU patents. Within the course of a few years and on the basis of crucial IP from LMU, NanoTemper Technologies GmbH, a spin-off enterprise created by LMU's highly regarded Center for Nano-Science (CeNS), has successfully developed and commercialized a number of innovative analytical instruments for use in the field of drug discovery, which are now on the market worldwide. The company has also won several prizes.



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Key data

- Number of patents granted (2011-2013): 93
- Number of spin-off companies*: 93
- Public funding for spin-offs*

Number of grants:	115
Total funding:	16.8 M €
- Total third-party funding acquired in 2012 (does not include clinical research): 133,5 M €

**For the period 2002 - 2013*



UNIVERSITY OF OXFORD

About Enterprise and Innovation at the University of Oxford

Vision: To serve society by promoting and contributing to economic, cultural, and social advances through the accessibility of Oxford's ideas, skills, and expertise.

Enterprise and innovation are fundamental to Oxford's continuing research success. The University fosters creative, entrepreneurial activity and collaboration with research users to increase uptake of research outputs by industry, government agencies, nongovernmental organisations, and community groups locally, nationally, and globally we focus on working in partnership and on developing skills and innovative services to drive sustainable economic growth. Through our knowledge and technology transfer activities, we maximise social and economic benefits worldwide through the application of Oxford's research outputs and expertise.

Organisation: There are a number of units and teams within the University that contribute to support for Enterprise and Innovation. In keeping with the highly devolved nature of the Institution, support for Knowledge Exchange activity exists at all levels of the University, in departments, in divisional offices, in the central Research Services team and through Isis Innovation Ltd, Oxford's wholly owned technology transfer company, arguably one of the most successful technology transfer operations in Europe.

The various knowledge exchange and research facilitation teams combine to support academic colleagues at all stag-

es of research collaboration with external organisations. Research facilitators in Departments have a detailed understanding of the research activities within the department. There are dedicated Business Development Teams in the Medical Sciences division (MSD) and in the Mathematics, Physical and Life Sciences division (MPLS).

The central Research Services team have dedicated expertise in research grants administration and contract administration, including pathways to impact and Knowledge Exchange activity within mainstream grants applications, encouraging PIs to consider the resources required for successful KE activity at the outset of a research project. Research Services includes a dedicated IP Rights Team with expertise in intellectual asset management and a Knowledge Exchange and Impact Team which facilitates cross-institutional initiatives and collaborations with external organisations.

Isis Innovation Ltd provides expertise and support in all aspects of technology transfer and supports the exploitation of intellectual property created by the University's researchers for the benefit of the UK economy, while ensuring that the financial rewards flow back to the University, its departments, and its individual inventors.

Contact details:

Knowledge Exchange and Impact Team: collaboration@admin.ox.ac.uk

Isis Innovation Ltd: innovation@isis.ox.ac.uk

Maths, Physical and Life Sciences: stuart.wright@mpls.ox.ac.uk

Medical Sciences: maxine.allen@medsci.ox.ac.uk

Social Sciences: aileen.marshall-brown@socsci.ox.ac.uk

Humanities: cleo.hanaway-oakley@humanities.ox.ac.uk

Recent Highlights

At the Heart of an Innovation Region

In January 2014 the Oxford City Deal, in which the University of Oxford is a key partner with Oxford City and Oxfordshire County Council and the Local Enterprise Partnership, included £14m of funding towards two innovation centres based at Oxford University; The Begbroke Innovation Accelerator at Begbroke Science Park and The Oxford BioEscalator at the University's Old Road campus in Headington.

The Begbroke Innovation Accelerator at Begbroke Science Park will build on a track record of successful integration of the academic and business communities, and will focus on the advanced engineering sectors of automotive, nuclear materials, advanced materials, robotics, as well as in nano-medicine, pharmaceuticals, energy storage and supercomputing. Begbroke Science Park already hosts over 20 different academic research groups and over 30 science based start-up companies from across the physical and medical science sectors.

The Oxford BioEscalator will be located in the centre of one of the world's leading medical research hubs and will catalyse the translation and commercialisation of the University's fundamental and clinical research for the benefit of patients and society. The University has invested in programmes to identify new treatments for many chronic diseases, including Alzheimer's, diabetes, cancer, inflammatory and many 'rare' diseases.

The BioEscalator will encourage interactions and networking opportunities for emerging businesses, established enterprises, researchers, entrepreneurs, and investors that will foster entrepreneurship and commercial developments and help business ideas in this sector to emerge, start-up, grow and move onto larger science parks in the region.

One of Oxford's newest start-ups is Brainomix, selling their e-ASPECTS software to clinicians worldwide to improve the assessment of stroke patients.

Revolutionising clinical practice in stroke prevention

The University of Oxford's Stroke Prevention Research Unit has recently been awarded the Queen's Anniversary Prize for Higher Education, for its outstanding work in preventive medicine. In little over a decade, the Unit has revolutionised clinical practice in stroke prevention by showing that urgent use of existing treatments to treat minor warning events – so called transient ischaemic attacks – reduced the risk of major stroke by 80%. This cheap but highly effective strategy has been adopted internationally, and is estimated to prevent 10,000 strokes per year in the UK alone, saving £200 million in annual NHS costs.

Using research to help Historic Houses innovate

Enterprise spans all of Oxford's academic disciplines. Heritage is an important part of Oxfordshire's commercial landscape. This comparatively unrecognised area of the British economy is exceptionally important to the UK, especially in the current economic climate.

In the Thames Valley Country House Partnership, Oxford University collaborates with Oxford Inspires, Visit Oxfordshire, owners of Oxfordshire's historic houses deploying rigorous academic research to develop new experiences to attract domestic and international tourists engage more with their local communities around the Thames Valley Region to become more engaged with historic country houses.

Entrepreneurship Launchpad

The Saïd Business School Entrepreneurship Centre promotes entrepreneurship research and practice, supporting student entrepreneurs creating start-ups in Oxford through programmes, premises and funding. Students from the business school and the wider university are empowered, taught and supported in their entrepreneurial ambitions.

Key data

- 150m£ Enterprise-related income in 2011-12
- c. 400 Consultancy projects in 2011-12
- >2000 Patents, >470 patent application families and 700 licence agreements
- >240 graduate start-ups
- >200 CPD courses offered across a wide range of industries and professions



PIERRE & MARIE CURIE UNIVERSITY

UPMC Working with Enterprise

UPMC's objective is to become a major driver of economic, social and cultural development in its environment.

To do this, UPMC considers it important to contribute to society both in terms of basic research and in the transfer of knowledge and technologies, which opens new horizons. Ensuring that research discoveries are fully exploited and the subsequent integration into society contributes to economic development and creates new businesses and jobs.

UPMC's activities with enterprises—both large and small—are coordinated by the Vice President for Enterprise, Stéphane Boucard, an associate professor at UPMC and member of the prestigious Kastler-Brossel Laboratory.

Research and Technology Transfer Department (DGRTT)

UPMC's work with larger, more established corporations includes research cooperation agreements that have been set up with leading industrial groups through the Research and Technology Transfer Department (DGRTT).

This department implements science policy at the University, such as monitoring research and technology transfer activities, and supporting University research organizations. It is the main liaison between UPMC and research organizations, private companies, foundations, associations, and of course laboratories.

Executive Director: Sophie Cluet
direction.recherche@upmc.fr

End-to-End Technology Transfer

UPMC has done its best to encourage faculty and students to maximize their research results and create spin-off companies. To facilitate these transfers and boost innovation, UPMC has established a complete range of independent structures:

- SATT LUTECH - for maturing technology,
- Agoranov - for start-up incubation,
- Quadrivium - venture capital.
- UPMC's TTO - to establish contracts with entrepreneurs and industry at large.

It also welcomes entrepreneurs who want to develop a project with the university. This process is managed by the Business and Technology Transfer Office of UPMC. Part of the DGRTT, this office negotiates and monitors bilateral research contracts with companies.

UPMC

4 place Jussieu, 75005 Paris, France
Tèl : +33 (0)1 44 27 44 27
www.upmc.fr





Negotiations can include financial and intellectual property associated with the results obtained in the framework of collaborative research. The office assists laboratories in assembling responses to tender when they involve a partnership with a company.

Manager: Luc Grateau
 entreprises-transfert@upmc.fr

The UPMC Foundation

The UPMC Foundation helps to finance the University's ambitious and innovative projects through gifts, donations or legacies from private citizens, companies, or other foundations. Major contributions are placed in a dedicated account and supervised by a management committee that includes the sponsor. This ensures that the funds are managed correctly and used exclusively for the project for which they were given.

Executive Director: Méline Mercier
 fondation@upmc.fr

Recent Highlights

Four Excellence Chairs created in three years

- **A Chair for Therapeutic Patient Education** launched through the support of the PHR Group (a network of more than 2,500 pharmacists), with financing for four years.
- **A Chair on Mini-Drones** dedicated to making them more operational, for the inspection and supervision of structures to optimize maintenance operations.
- **A Chair on Robotic Systems** to facilitate maintenance at high-voltage power stations (electrical transformer installations and poles).
- **Smart and connected mobility: the "Connected Car"** Chair supported by Atos and Renault and funded for five years, will be located in the Paris 6 Computer Laboratory (LIP6).

Long-term partnerships

UPMC has a long history of collaboration with some of the country's largest corporations, such as Total, in the complete range of the company's activities;

EDF (Électricité de France) for a wide range of simulation and modeling; and Thales, with a shared research team on the University campus. The University also works with close to 100 SMEs in the region.

Cooperation with Clusters

By associating research organizations and universities together with large industry and SMEs, these partnerships develop joint projects as well as contributions to think tanks and roadmaps. Cap Digital (Digital Life), System@tic and Medicen (Life Sciences) are the three main clusters with a high-level of involvement from UPMC faculties and management.

Shared laboratories

- The Vision Institute works with Essilor, a world-leader in corrective lenses, integrating basic, clinical and industrial research.
- A-ICM, which focuses on diseases of the nervous system such as Alzheimer's or epilepsy, has a shared business incubator with Air Liquide.

Key data

- More than 25 patents filed every year
- 111 Invention disclosures
- 460 patents and more than 55 software IPs
- 1.5 M€/year in royalties
- 16 M€ bilateral contracts
- 24 M€ joint contracts with industry
- Companies founded by or with researchers or students at UPMC include: Collectis, Fovéa, Carmat, Neovacs, Qosmos, Ucopia, Géocarta, Climpact, Biophytis, and Agorabox

UNIVERSITÉ PARIS-SUD

Université Paris-Sud is engaged in rapidly developing its actions in the field of innovation as well as its partnerships with many enterprises, from the very large to the very small ones. These actions take place in the context of large academic-industrial consortia sponsored by the "Investment for Future" national program, or as bilateral contracts between Paris-Sud University and some industrial partners.

They are concerned with

- valorizing as much as possible extensions of high societal impact of the research performed in the University laboratories, in particular via an access to our instrumental platforms offered to companies, and
- adapting the training curricula to optimize our students' insertion in the enterprise world, at bachelor, master or doctorate level. This includes training students to improve their awareness and skills in entrepreneurship.

Academic-Industrial consortia

Université Paris-Sud actively participates in several competitiveness clusters such as Medicen, in therapeutic innovation, Moveo, in research and development in automobile industry and public transportation, Systematic in software-dominant systems, and Astech, in aeronautics, space and onboard systems.



Paris-Sud University is also partner of a consortium on the production of biofuel for planes, and of two "Institute for Energetic Transition" targeted on energetic efficiency of industries and on smart grid, respectively.

Industrial and Commercial Activity Office (SAIC)

Since 2003, Université Paris-Sud has been working on improving the technological transfer of its research production through its SAIC, whose role is to protect intellectual property by patenting, and to facilitate its transfer to socioeconomic circles by licensing, or start-up creation. Many patents are filed or published every year, primarily in the medical, physics, and engineering science fields. Contract research undertaken by the University amounts to 15 million euros per year.

These include European (FP7, ERC) and national (ANR, FUI...) contracts in collaboration with various partners, and supply contracts. The success of all these transfer initiatives results from the existence of research activities linking laboratories and businesses, an active support of maturation of results, and the awareness among staff as to the importance of intellectual property and technology transfer.

Career Center (SIP)

Paris-Sud University considers the professional success of its graduates as a top priority. Our Career Center is at once:

- Central connecting-link between enterprises and Université Paris-Sud. The active development of this network allows enhancing the employment opportunities for our students and graduates, taking advantage of the proximity to the Plateau de Saclay innovation cluster

Key data

- 20m related income in 2012 incl. Life-long Training (representing only 30% of the University global partnerships since 70% are managed by Inserm & CNRS TTO)
- c1000 Patents in 280 patent families
- 30 Technological platforms
- 45 Employability-boost courses offered for PhD candidates (1100 PhD candidates participated in the school year 2012-2013)
- 4600 job and internship

- Advice center for our students on building their professional life project. We support our students from their first years at university in making decisions about their future career, in planning their job search strategy, and in making applications and preparing for interviews
- Organizer of courses for PhD candidates in order to improve their employability skills and introduce them the stunning diversity of the career paths.

Life-long Training

Every year, Université Paris-Sud welcomes approximately 5000 adults who return to study, which represents 20% of the global students and 2250 diplomas. These graduated trainings are supported by the excellence of the education and by the skills developed by our research labs and contribute to the valorization of our know-how in the enterprises.

Recent Highlights

Technology transfer to connect the world : Green Communications

Green Communications is a start-up company, which provides solutions aiming at ensuring a good quality of Wi-Fi coverage in large areas with few or no cabling available. Green Communications is based on the research in the field of wireless

networks such as MESH and ADHOC networks, conducted by a Professor and his team. Over the last 3 years, they have developed the Start & Stop technology which automatically turns into a sleep mode and reactivates the nodes of a wireless network according to its needs, allowing energy savings. In 2013, this technology has been licensed by the University to Green Communications.

Transferring technology for human health

Nodea Medical develops a new innovative cancer screening tool : Probea. By a minimally invasive method, the technology will better detect breast cancer while improving patient comfort. With a single needle-type "vaccine" Probea will analyze the cancerous nature of suspicious masses detected by mammography. Laureate of the "Prix de la valorisation" in 2010, this technology has been licensed to Nodea Medical in 2013.

Scientific community awareness in technology transfer

In 2000, the Scientific Council of the University created an award to acknowledge the efforts/investment of its researchers in technology transfer and to make them recognized by their peers : the "Prix de la Valorisation de Paris-Sud". This award is an efficient incentive to detect scientific results with high technology transfer potential and to promote technology

transfer among the research community. It has also demonstrated that there is no discrepancy between high-level research and technology transfer. Since the first edition of this award, 12 laureates out of 30 have created a start-up company.

Fostering student's entrepreneurship

With 11 academic and 13 socio-economic other partners, the Paris-Sud University is an active member of the Pôle Entrepreneuriat Etudiant Paris Saclay (PEEPS, Paris Saclay Student Entrepreneurship Cluster), which aims at promoting student's entrepreneurial interest and motivation. In that context, PEEPS proposes to all students of Paris Saclay, from the DUT (2-year University Technology Degree) to the Doctorate, a large choice of training sessions in the field of entrepreneurship and business development. PEEPS also offers a strong ecosystem of innovation' stakeholders, involving the local public authorities, the incubators, the business angels, the competitiveness clusters and the companies. In 2013, and for the third consecutive year, it has been awarded as best entrepreneurial region in France.

Contact details:

saic@u-psud.fr

Paris-Sud TTO

More info at: www.u-psud.fr/en





UNIVERSITY OF STRASBOURG

The Technology transfer at the University of Strasbourg

The University of Strasbourg has a strong commitment to working with its partners in the business world to strengthen their relationships. The aim is to contribute to the French and European economy through co-development and exploitation of assets derived from research activities.

The University has an industrial and commercial department, led by the Vice President "Intellectual Property, Contracts & Partnerships" who defines policy and positioning of the technology transfer for the University of Strasbourg.

In 2011, the University of Strasbourg applied to the national Call For Proposal of the French government with the aim to create private companies managing part of the activities of the previous existing technology transfer offices (TTO).

In 2012, with all the other public research institution present in Alsace, the University of Strasbourg created the SATT Conectus Inc., the first one created in France, securing a 36 million Euros funding for the 10 first years, mainly to invest in intellectual property titles and in Proof of Concept (POC) projects.



SATT stands for "Société d'Accélération du Transfert de Technologie", the new French model for TTO created in France in 2012.

About SATT Conectus Alsace

Conectus Alsace is a "SATT".

Why SATT?

- Reduce fragmentation of TT system: A unique gateway for TT on a given territory
- Improve operational efficiency
- Foster absorption of technologies by companies (SMEs) through POC funding
- Create competitiveness, jobs and wealth out of public research

Conectus Alsace

Conectus Alsace is in charge of managing IP and licensing for all public research laboratories in Alsace Region, including

those of the University of Strasbourg, as well as research collaboration with industry (average 6M€ / year).

7 shareholders : CNRS (National Centre for Scientific Research), ENGEES (National School of Water and Environment Engineering of Strasbourg), INSA Strasbourg (National Institute for Applied Science), Inserm (National Institute for Healthcare and Medical Research), UHA (University of Upper Alsace) and Unistra (University of Strasbourg) and the Caisse des Dépôts et Consignations.

<http://www.conectus.fr/fr/contacts-0>

For specific partnerships with the university of Strasbourg, please contact : jean-marc.jeltsch@unistra.fr

Key data

- 96 research units are served by Conectus
- 29 employees
- 21 investments in POC for a value of 4,7 M€ since May 2012
- 39 new priority patents filed by the SATT since 2012
- Management of the shareholder's patent stock representing 28 family transferred at the SATT's creation
- 22 signed licences
- 20 start-up are ongoing
- 4 co-conception program started and 5 co-conception program in negotiation

Recent Highlights

Co-Conception for Technology Maturation

The missions of Conectus Alsace include financing POC of innovative technologies originating in Alsatian public research labs, in order to facilitate their adoption and absorption by the private sector, particularly SMEs.

In order to make access to these technologies easier for companies and ensure that industrial requirements are the driver of the financed research, Conectus Alsace has launched the « co-conception for technology maturation ».

Conectus Alsace seeks to involve a partner company during the construction of the co-conception program in order to benefit from its industrial expertise.

The company, in exchange for a limited “man hours” contribution, secures access to a technology that can potentially improve its competitive position on the market, without bearing any financial or technical risk.

The involvement of the company in the program of co-conception in maturation is to contribute to:

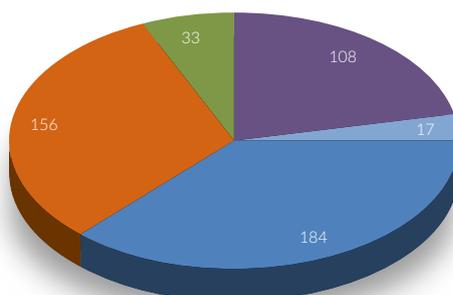
- The definition of the technical program specifications.
- The follow-up of the project: 1 or 2 day every 2 months for 18 months.

Research Contracts

A further important task is to manage the research contracts (signing, negotiation, financial management).

By connecting companies and laboratories, Conectus Alsace is a root of research contract.

- Unique one stop shop for laboratories
- in 2013, 210 contracts for a value of 6 M€
- since 2012, 498 Contracts
 - 394 with French partners
 - 104 at an international level



- Big Companies
- SME SMI
- Public (collaboration with Cluster)
- Third Party (Public)
- Public Subsidies

Conectlabs - <http://conectlabs.conectus.fr>

Conectus Alsace has uploaded “Conect’Labs”: a unique interactive tool, which proposes the opportunities of the public research in Alsace. Conect’Labs brings different information:

- 350 research team
- 120 skill offers
- 10 platforms
- 45 technology offers

This platform suggests two types of researches:

- The advanced research, with 6 fields (Health-Life sciences, Liberal Arts Sciences, Risk and Environment, Information and communication technology, engineering sciences, chemicals-materials).
- The Keyword Search



ISIS

Institut de Science et
d'Ingénierie Supramoléculaires

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UTRECHT UNIVERSITY

Utrecht University and
the University Medical
Centre Utrecht

Enterprise and innovation

Valorisation and Collaboration

Utrecht University aims to have research and entrepreneurship make an indispensable contribution to solving societal challenges. Increasingly, researchers take the societal issues as a starting point for their research. They create new opportunities for collaboration, enterprise and make connections that offer new possibilities to all parties involved. This happens both inside and outside the knowledge institutions. In doing so, external partners and researchers jointly generate value. Each faculty has research support offices to support scientists with their research grants and collaborations, together with legal affairs. In addition, specialised valorisation support is provided by,

Utrecht Holdings – technology transfer, spin offs and investments

Utrecht CE – centre for entrepreneurship education and training

Utrecht Inc – startup support and business acceleration

Utrecht Science Park – housing, facilities and general Science Park related matters



Utrecht Holdings – technology transfer, spin offs and investments

Utrecht Holdings motivates and supports Utrecht University and the University Medical Centre Utrecht in the field of protecting and valorising intellectual property and provides support, supervision and financing to entrepreneurial colleagues and their spin-off companies.

More information:

www.utrechtholdings.nl

Utrecht CE - Entrepreneurial Education

Talent grows when it is invested in. That applies to researchers, students as well as to entrepreneurs. As a result, specific actions have been taken on entrepreneurial education. No matter what career the current student chooses, an entrepreneurial attitude is meaningful in all situations. Entrepreneurial education is of growing importance to thoroughly prepare students for their careers.

Whether at a large company or a not-for-profit organisation, you can excel with the right mentality and entrepreneurial knowledge and skills.

More information: www.utrechtce.nl



Universiteit Utrecht



UMC Utrecht



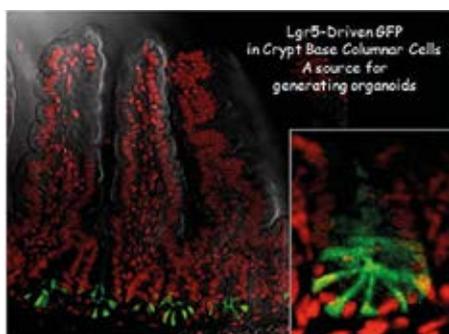
Utrecht Inc – startup support and business acceleration

To turn science and knowledge into innovations and value, entrepreneurship is necessary. Knowledge that is utilised by existing or new companies more often finds its way to broad application. That is why innovative startup companies are supported and facilitated in Utrecht. Special programmes, coaching and an extensive network ensure that they accelerate their maturing more quickly. In the past five years the number of startups that are established in the Utrecht Science Park has grown considerably.

More information: www.utrechtinc.nl

The HUB Foundation for Organoid Technology (2013)

The HUB is founded on the pioneering work of Prof. Dr. Hans Clevers who discovered methods to grow stem cell-derived human epithelial 'mini-organs' (organoids)



from tissues of patients with various diseases including cancer and cystic fibrosis. The HUB is a not-for-profit organisation founded by the Royal Netherlands Academy of Sciences and the University Medical Center Utrecht. The HUB offers licences to its patented Organoid Technology for drug-screening and access to organoids in the Living Biobank for preclinical drug discovery and validation. In addition, the HUB provides drug screening services to third parties. On December 18, 2013, the HUB Foundation for Organoid Technology and Boehringer Ingelheim signed an agreement on generating a Living Biobank for Breast Cancer. On January 21, 2014, the HUB announced that it signed a licensing agreement with STEMCELL Technologies Inc. for the manufacturing and worldwide distribution of cell culture media for growing Organoids.

More information: www.hub4organoids.nl

Successful collaboration between Utrecht University and INCONTROL

Researchers from the department of Computer Sciences of Utrecht University have developed software allowing the simulation of large crowd movements in places like football arenas, airports and city streets. The software can handle up to eighty thousand individuals in fast and realistic 3D animation.

Utrecht based company INCONTROL Simulation Solutions acquired a licence from Utrecht University allowing it to integrate the software in its safety & security simulation products and to market these worldwide. Based on this agreement, both parties will match their research agendas to intensify their collaboration on leading-edge crowd simulation software solutions.



Key data

€ 65 million	Enterprise related income	25	Number of shareholdings/spin offs
92	Total number of patent families under control	1460	Number of students following entrepreneurship course
8	New patent families		Number of faculty participated in valorisation course/awareness course
16	New licences		
€ 4 million	Licence Income		



UNIVERSITY OF ZURICH

University of Zurich - Fostering Innovation

The University of Zurich (UZH), Switzerland's largest university, fosters innovation and entrepreneurship with a variety of instruments spanning from education and training to research and support for entrepreneurs.

Education and training

UZH offers a variety of measures to staff, students and external business partners to help them develop their business and management skills and to encourage the creation and growth of new and existing ventures. These include various programmes at the Chair of Entrepreneurship, the Executive MBA and diverse entrepreneurship training programmes implemented jointly with Venturelab and CTI Entrepreneurship. Dedicated modules also exist for social entrepreneurs, and startup@UZH offers coaching to students and staff to support them in their first steps towards starting their own company.

entrepreneurship@business.uzh.ch
info@emba.uzh.ch
alan.frei@uzh.ch



University of
Zurich^{UZH}

Research collaborations

Due to its excellence in research, UZH is a sought-after research partner not only for other academic research institutions, but also for institutions from private enterprise. Each year, UZH researchers initiate over 500 new joint research projects with outside business partners. Collaboration opportunities exist across all disciplines, and UZH has implemented a range of translational research programmes and centres to facilitate the transition from basic research to practical applications. In questions related to collaborative projects, researchers are supported by Unictetra, UZH's technology transfer unit. mail@unictetra.ch

Commercialisation of intellectual property

UZH has a strong track record in commercialising research findings and related intellectual property either in collaboration with existing companies or through the creation of spin-off companies. Since 1999, more than 40 products have been introduced to the market under a UZH license. Unictetra is responsible for managing the IP and the commercialisation processes.

More Information: www.unictetra.ch

Technology Transfer Case Studies

The following case studies provide examples of successful technology transfer projects in various business sectors. The three products, all based on inventions made by UZH researchers, brought about significant benefits in the fields of patient care and food safety. In addition, they generated total license revenues for UZH in excess of CHF 100 million.

Pharmaceuticals: human interferon-alpha

As one of the biotech pioneers, Prof. Charles Weissmann from UZH's Institute for Molecular Biology invented a procedure to produce high quantities of human interferon-alpha in bacteria. The patent was licensed to Biogen, Inc. (later Biogen-Idec) and formed one of the cornerstones of the company which Charles Weissmann co-founded. Interferon-alpha-2b ("Intron®A") later became Biogen's first market-approved drug. It is sold by Schering-Plough, Inc. as a treatment for various illnesses, including hepatitis B and certain forms of leukaemia.

Medical devices: robotic rehabilitation for patients

Research by Prof. Volker Dietz and Dr. Gery Colombo at the University Clinic Balgrist in Zurich formed the basis of Hocoma AG, a company co-founded by Dr. Gery Colombo. Today, the product "Lokomat®" is successfully used in many therapy centres around the world. Lokomat is a driven gait orthosis that automates locomotor therapy on a treadmill and improves the efficiency of treadmill training. The Lokomat enhances therapy outcome by providing highly intensive, individualised training in a motivational environment of constant feedback.

Veterinary diagnostics: prion test to increase food safety

Misfolded prion proteins are believed to cause a new form of Creutzfeldt-Jakob disease (vCJD). Dr. Bruno Oesch and his colleagues Dr. Markus Moser and Carsten Korth at UZH's Institute of Brain Research developed a rapid and reliable test to detect misfolded prion proteins in meat. Based on their invention, they founded the company Prionics AG, which has become the world-leader in prion diagnostics. As proof of the key role their discovery has played in improving food safety, over 40 million Prionics®Check WESTERN tests and the successor products have been sold.

Key data

- Research collaboration with business partners: over 500 new projects every year
- Patents: currently over 300 active patent families
- Licensing: over 280 active licenses
- Spin-off companies: over 80 spin-off companies since 1999 that develop or market new products





EDINBURGH

LUND

OXFORD

CAMBRIDGE

LONDON

AMSTERDAM

LEIDEN

UTRECHT

LEUVEN

PARIS

HEIDELBERG

STRASBOURG

MÜNCHEN

GENÈVE

FREIBURG

ZÜRICH

MILANO

BARCELONA

A stylized map of Europe in shades of blue. A small orange dot is placed over the location of Helsinki, Finland, with the word "HELSINKI" written in white capital letters above it.

HELSINKI

ABOUT LERU

The League of European Research Universities (LERU) is an association of twenty-one leading research-intensive universities that share the values of high-quality teaching within an environment of internationally competitive research.

Founded in 2002, LERU advocates:

- education through an awareness of the frontiers of human understanding;
- the creation of new knowledge through basic research, which is the ultimate source of innovation in society;
- and the promotion of research across a broad front in partnership with industry and society at large.

The purpose of the League is to advocate these values, to influence policy in Europe and to develop best practice through mutual exchange of experience.

Facts and figures

Together LERU member universities account for more than:

- 550,000 students, including 50,000 PhD candidates.
- Each year about 55,000 master's degrees and 12,000 doctorates are awarded at LERU universities.
- The total research budget of LERU's members exceeds €5 billion.
- More than €1 billion is granted by research councils, while over €1.25 billion comes from contract research.
- The total sum of research grants from EU projects to LERU universities is approximately €300 million.
- More than 20% of ERC grants have been awarded to researchers at LERU universities.
- Over 230 Nobel Prize and Field Medal winners have studied or worked at LERU universities.
- 55,000 academic staff and 55,000 non-academic staff work at the member institutions (hospital-only staff not included).

LERU publications

LERU regularly publishes a variety of papers and reports which make high-level policy statements, provide in-depth analyses and make concrete recommendations for policymakers, universities, researchers and other stakeholders.

All LERU publications are freely available in print and online at www.leru.org.



PUSHING
THE FRONTIERS
OF INNOVATIVE
RESEARCH

League of European Research Universities

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Universitat de Barcelona
University of Cambridge
University of Edinburgh
University of Freiburg
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Universiteit Leiden
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