

BRINGING NEW IDEAS TO LIFE

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THE OFFICE OF TECHNOLOGY TRANSFER OF
THE UNIVERSITY OF BERN AND
THE UNIVERSITY OF ZÜRICH

2005

ANNUAL REPORT

SUMMARY

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UNIVERSITÄT
BERN

INSELSPITAL
UNIVERSITÄTSSPITAL BERN
HOPITAL UNIVERSITAIRE DE BERNE



Universität Zürich



UniversitätsSpital
Zürich

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THE ROLE OF UNIVERSITIES IN TECHNOLOGY TRANSFER

Research cooperation with partners from the private sector and the outlicensing of university technologies for commercial application are of major importance for the University of Bern and the University of Zurich and their affiliated university hospitals. The prime objectives of these activities for the institutions are:

- ▶ Contribute to the economy by fostering the exchange of knowledge and know-how with outside partners
- ▶ Facilitate the economic exploitation of research results for the public good
- ▶ Induce and cultivate close ties to industry for mutual benefit
- ▶ Recruit, reward and retain faculty
- ▶ Generate income

Through these activities, the universities make a significant contribution to the economy by strengthening the innovation potential of their collaboration partners. Joint research and development projects result in new products and services for the benefit of society, and lead to the creation of new jobs in established businesses and newly created spin-off companies. Technology transfer activities also foster the attractiveness of the universities, provide new impulses in education and research, and increase the financial resources of the universities.

Unitectra is an organization established by the two universities in 1999 to facilitate and professionalize their technology transfer activities. Its services support researchers and management of these institutions in all aspects of technology transfer.

Main services include:

- ▶ Negotiate research contracts and clinical trial agreements
- ▶ Manage the economic exploitation of research results: identify commercially relevant research results, evaluate their economic potential, define commercialization strategies, protect and manage intellectual property, contact suitable industrial partners and negotiate license agreements
- ▶ Support the creation of new spin-off companies
- ▶ Serve as contact office for partners from economy
- ▶ Sensitize and train university researchers in technology transfer aspects

Efficient and flexible procedures to manage the various aspects of technology transfer projects have been established at the above-mentioned institutions. Stringent quality management, and the continual optimization of the procedures aim to further facilitate interaction with outside partners and to minimize the administrative burden for industrial partners and researchers.

Through its offices in Bern and Zurich, Unitectra maintains close contact to researchers in order to ensure short reaction times. Unitectra's experienced team consists of professionals with a scientific-technical or legal background and usually several years of experience in the private sector.

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In September 2005, the University of Zurich spin-off company Hocoma AG in Volketswil launched its new product Erigo® (right). This novel tilt table with an integrated robotic stepping system supports and facilitates the early mobilization of bedridden patients. The system was developed by **Dr Gery Colombo** (left) and his team from Hocoma in close collaboration with **Prof. Dr Volker Dietz** (middle) and his group at Balgrist University Hospital. In the early phase, the project was supported by a grant from the Unictetra Technology Transfer Fund. Erigo® is the second system for patient rehabilitation, following the robotic treadmill training system Locomat®, resulting from the fruitful collaboration between these partners.



Prof. Nicolas Thomas from the Space Research and Planetary Sciences Division, Physikalisches Institut of the University of Bern is currently developing a novel laser altimeter (BELA) for the BepiColombo Mercury mission of the European Space Agency (ESA). BELA will, for the first time, return a digitized laser reflection signal, and will gather topographical data of the surface of this relatively unknown planet with unprecedented detail and accuracy. The substantial funding by the Swiss Space Office for this work will help to strengthen the leading position of the University of Bern in space research and applied laser technology. The BepiColombo mission will be launched in 2013 and will take 5.8 years to reach Mercury. The prime mission will begin in 2019 and last 1 earth year.

Inorganic scintillators play an important role in the detection and visualization of high-energy radiation. Applications in medical diagnostics, environmental analysis and oil exploration are only a few examples in which inorganic scintillators are used.

Prof. Güdel (left) and **Dr Krämer** (right) of the Department of Chemistry and Biochemistry of the University of Bern have developed an inorganic scintillator with both a higher light output and a better energy resolution than conventional materials. The invention has been protected by patents and licensed to St. Gobain Crystals, a world leader in the design and manufacture of materials and assemblies used in radiation detection. The scintillator is now commercially available under the registered trademark Brilliance®, and St. Gobain is considerably ramping-up its production.



Scientists from the University of Zurich have been at the forefront of prion research for a long time. Society and the economy have profited from the know-how and research results of the University in many different ways, such as consulting to authorities and regulatory bodies on prions and prion-related diseases, research carried out for companies to optimize production processes and prion testing kits developed on the basis of university research results (Prionics®-Check Western). The group of **Prof. Dr Adriano Aguzzi** of the Institute of Neuropathology has developed and characterized several anti-prion monoclonal antibodies with unique binding properties. Some of these antibodies were licensed in 2005 to a Swiss and a large US-based biotech company for the development of novel diagnostic testing methods in both the veterinary and the human field.



HIGH VOLUME OF TECHNOLOGY TRANSFER ACTIVITIES

Technology transfer activities, such as research cooperations and the outlicensing of university technologies, have steadily increased in the past years and have now reached a high level. In 2005, Unictetra dealt with 820 new transfer cases from the Universities of Bern and Zurich and their associated hospitals, an increase of more than 25% over the previous year. Included in these figures are the research cooperations of the medical, veterinary and natural science faculties of both universities, and the activities of all faculties of the institutions in the commercialization of technologies. Research cooperations of the other faculties are handled by the legal departments of the universities.

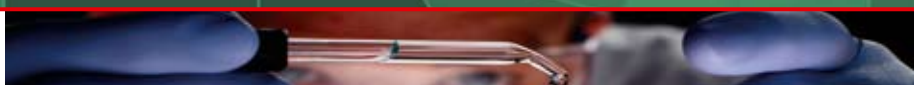
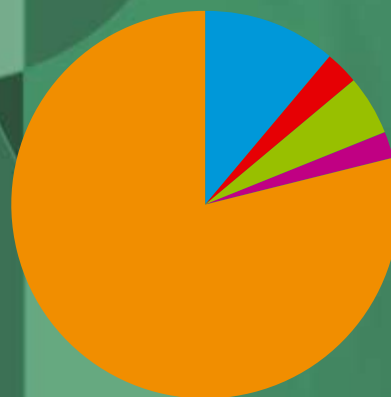
The majority of activities were in the broadly defined area of life sciences (incl. medical technology). Other large areas include physics and chemistry, information and communication technology (ICT), and the human sciences.

In providing its services, Unictetra collaborates closely with the researchers. Their active participation in the transfer process is crucial for success. All services are free to researchers.

In many industrial sectors, the protection of intellectual property (IP), mostly in the form of patents, is of high importance in protecting the large investments needed for the development and launch of new products. Depending on the specific situation, the universities either protect commercially interesting IP themselves, or, alternatively, in cooperation with an industrial partner interested in commercializing the technology. Besides guidance through the patenting process, Unictetra provides a full range of other services on IP issues, including training courses, for researchers. About 50 new patent applications were filed in 2005.

NEW CASES BY SCIENTIFIC DISCIPLINE

Life Sciences/MedTech	79 %
Physical Sciences	11%
Information and Communication Technology (ICT)	3%
Human Sciences	5%
Misc.	2%



INCREASING NUMBER OF TECHNOLOGY TRANSFER AGREEMENTS

In total, Unitectra negotiated almost 700 new technology transfer agreements for the two universities and the university hospitals, which covered a broad range of activities. Among these were 460 research contracts and clinical trial agreements. The number of licensing agreements grew to 41 (+21%). Unitectra handles a variety of other contracts for researchers, such as consulting agreements, material transfer agreements (MTA), interinstitutional agreements etc. Geographically, about half of all transfer agreements involved partners from Switzerland (53%), 28% from other European countries, 15% from North America, and the remaining from the rest of the world.

Of last year's contracts handled by Unitectra, 40% of the partners were large companies, 20% small or medium sized enterprises (SME, max. 250 employees) and the rest were other universities or public institutions.

TECHNOLOGY TRANSFER AGREEMENTS



Research Agreements	301
Clinical Trial Agreements	159
Licensing Agreements	41
Material Transfer Agreements	94
Misc.	88

COMMERCIALIZATION OF RESEARCH RESULTS

The commercialization of research results is a major focus of Unitectra's work, independent of whether such results originate from publicly funded research projects, such as the Swiss National Science Foundation, or from collaborative projects with external partners. Usually, commercialization is done through the licensing of intellectual property rights either to existing companies that are both interested and able to develop, manufacture and market products based on the licensed technology, or, alternatively, to newly created university spin-off companies. Unitectra offers a broad range of services in these areas.

Last year, Unitectra received more than 80 invention disclosures from researchers. Based on an evaluation process of the inventions together with the respective scientists, Unitectra defines and implements the optimal strategy for the commercialization of economically interesting results. Potentially interested companies are contacted with such licensing opportunities on the basis of a targeted marketing approach. Last year, more than 40 patented or unpatented technologies and biological materials were licensed to commercial partners. About 60% of these licenses were granted to SME.

Another route for the development and commercialization of university technologies is through spin-off companies. The two universities provide a range of support for entrepreneurs, such as training and education, coaching, renting of university infrastructure etc. At the University of Zurich, selected transfer projects with high potential can be supported financially by Unitectra through seed funding from the privately sponsored technology transfer fund. Four new companies were spun-off last year from the University of Zurich. Three of them are active in the biomedical field, and one in information and communication technologies.



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UNITECTRA

Unitectra is a non-profit incorporated company which is wholly owned by the University of Bern and the University of Zurich. As a service organization, it provides support for researchers of public research institutions in their dealings with outside partners from the public and the private sector. Unitectra's services are available for the researchers of the University of Bern, the University Hospital Bern ("Inselspital"), the University of Zurich and the University Hospital Zurich.

In addition, Unitectra has collaboration agreements with various other research institutions such as Universities of Applied Sciences and federal research institutions.

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