



Ideas from the research sector for the market

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Our mission: From idea to market

Scholarly and scientific endeavors and research in general provide impetus for a society's development and help to create and secure prosperity. Each and every day, new ideas that could make people's lives better in the future arise at Freie Universität Berlin. We support and promote a culture of innovation on campus so that knowledge and technologies from the research sector can be applied more quickly.

Under the motto "Entrepreneurial Network University," Freie Universität Berlin and Charité – Universitätsmedizin Berlin strengthened the start-up culture on campus with lasting effects from 2013 until 2018. The strategy won distinction from the German Federal Ministry for Economic Affairs and Energy in the EXIST Culture of Entrepreneurship – Entrepreneur University competition. The implementation was co-financed with funding provided by the German federal government. Measures included in this project are labeled with the following sign on the pages of this brochure:



However, a highly developed culture of innovation is not only a valuable addition to society at large. It is also a gain for the academic environment. Cooperative business initiatives and spin-offs offer fresh stimulus for academic research and make it possible to raise external funds. A portion of the income from exploiting intellectual property rights also flows back to the university.

Freie Universität Berlin supports students, scholars, scientists and alumni in several fields:

- protecting and commercializing intellectual property,
- support for innovation,
- support for start-ups, and
- cooperative research initiatives with companies and contract research for companies

The Legal Affairs in Research and Transfer team, Research Funding and Information team, the External Funding Administration and Profund Innovation, the central service institution for knowledge and technology transfer, work hand in hand to achieve this.



How ideas that arose at Freie Universität prove themselves on the market was the subject of the exhibition titled "The University Companies," held at the Berlin Chamber of Commerce and Industry's Ludwig-Erhard-Haus.

Digital Entrepreneurship Hub: From research to teaching



Entrepreneurship in the natural sciences: Chemistry professor Rainer Haag won the Teaching Award of Freie Universität Berlin for the course *Trans pro Idee*.

From the life sciences to digital publishing, almost every field of business activity these days is influenced by both research findings and the use of digital technologies. With this in mind, the Digital Entrepreneurship Hub at the Department of Information Systems of Freie Universität brings together aspects of digitalization with fundamental research and teaching activities.

Via study paths, students enrolled in bachelor's and master's degree programs, doctoral candidates, and postdocs can further develop their entrepreneurship competences in consecutive courses. Seminars geared toward real-world practice also offer opportunities to work on ideas and business models for spin-offs. Every year, Freie Universität Berlin offers 16 different courses on entrepreneurship, which are open to students from about 140 programs.

A junior professorship was established at the Department of Information Systems for the Digital Entrepreneurship Hub. From there, joint activities in entrepreneurship education with other departments at the university, Profund Innovation, and external partners from the scientific, and business sectors are coordinated. In addition, questions regarding challenges and consequences of entrepreneurial actions in an increasingly digital world are studied from an interdisciplinary perspective.



**DIGITAL
ENTREPRENEURSHIP
HUB**



“Successful entrepreneurs are characterized by an entrepreneurial mindset and an ecosystem mindset. The Digital Entrepreneurship Hub supports both.”

Prof. Dr. Hannes Rothe, junior professor of Educational Service Engineering and IT Entrepreneurship, Department of Information Systems

And from teaching to practice



ELAP: Teaching made easier!

Ideas for spin-offs arise in all academic disciplines. Still, many departments' teaching activities did not cover entrepreneurship for a long time. Freie Universität Berlin has established a platform for teaching and dialogue on entrepreneurship called Entrepreneurship Lehr- und Austauschplattform (ELAP) to help instructors conceptualize lectures and seminars for their departments and provide support. The digital platform provides multimedia teaching and learning components for entrepreneurship education. Instructors can select from among these modular units to prepare their own courses efficiently, depending on their needs. In addition to economies of scale, ELAP also ensures high quality in entrepreneurship education.

In the IT Entrepreneurship seminar at the Department of Information Systems, students learn to develop a business model for their own ideas as part of a team, view it with a critical eye, and present it in front of an audience. E-learning involving video lessons and checks of what students have learned is also part of the program, along with guest presentations by experienced entrepreneurs. Through dialogue between instructors and students, the concepts are further developed and finally entered in the Berlin-Brandenburg Business Plan Competition. Teams from Freie Universität have frequently taken first place in the competition's *Study* category. Several spin-offs have already arisen from the seminar. With this as a model, other institutions at Freie Universität, including the Department of Biology, Chemistry and Pharmacy and the Dahlem Research School, have established similar courses.



In this seminar, Jonathan Hensky and his team developed the idea for the *whisper* encrypted communication network. The start-up's founding process received support from Profund Innovation.

"The Digital Entrepreneurship Hub is THE point of contact for research and teaching activities involving entrepreneurship at Freie Universität Berlin."

Prof. Dr. Martin Gersch, professor of business administration at the Department of Information Systems



Support for innovation: Finding “pearls” in the ocean of research



The start-up AUGLETICS won the Research to Market Challenge with its idea for an innovative rowing ergometer. Now the devices are in place at gyms and in training rooms of rowing clubs.

Profund Innovation is the first point of contact for all scholars, scientists and researchers who wish to further develop ideas for the application of their research. Its innovation managers offer expertise and advice while also actively seeking out dialogue with research groups in order to learn about results with innovative potential early on. During an initial discussion, possible applications are discussed and then the next steps toward commercialization are planned jointly.

Important questions include: Is a patent possible, or are there other industrial property rights? How great is the market potential? Which state subsidies or funding programs are suitable for validation purposes? What transfer path should be taken? The path to commercialization might lead via validation support to industrial cooperation, for example, or to a spin-off.



Research to Market Challenge

The *Research to Market Challenge* enables rapid evaluation and further development of research-based product or business ideas. The contest is open to entries in several categories: *Digital, Life Sciences & Technologies* and *Cultural & Social*. Freie Universität Berlin organizes the competition in cooperation with Technische Universität Berlin, Humboldt-Universität zu Berlin and Charité – Universitätsmedizin Berlin. The best proposals receive award money totaling 9,000 euros.



“Innovation is constantly occurring as a byproduct of top-level research. We help to identify and protect the most promising ideas, spur their evolution and further development, and put them into practice.”

Dr. Christine Reuter, Innovation Manager at Profund Innovation

Validation: Thorough testing improves one's chances

Very few findings derived from basic research lead directly to a market-ready application. Finding out whether the idea does in fact have what it takes to become an innovative product often requires further research. This gap between the initial results of fundamental research and a possible application is closed through validation. This phase focuses on proving the innovation potential of research results and on evaluating them and defining suitable applications. Successful validation reduces the risk undertaken by third parties when they invest in further development, and increases the value of the idea.

The *Berlin InnoBridge* program offers an entry point for validation. Researchers from Freie Universität work together with representatives from companies and students enrolled in master's degree programs at the business school ESCP Europe on their innovation projects and gain insight into the development

of business models, market analysis and presentation techniques. After two months, the teams present their results at an event called Demo Day.

For research-intensive validation, teams can apply for funding from the *VIP+* program of the German Federal Ministry of Education and Research (BMBF) or for the *Proof of Concept Grant* awarded by the European Research Council. The *VIP+* program is expressly open to all scholarly and scientific disciplines. This means that prospective funding is also available for feasibility studies, test series, or pilot applications aimed at seeing whether research results from the humanities, social sciences, and cultural studies are suitable for use in practice. For invention-based projects, funds are also available at Freie Universität under the *Berlin Quality and Innovation Offensive*.



An app store for the Internet of Things: To validate this idea, the computer science professor Matthias Wählisch and his partners receive 1.8 million euros from the *VIP+* funding program.

“Through the Berlin InnoBridge project, we offer researchers and companies the opportunity to have their business ideas developed into solid concepts by business school students.”

Tomasz Gingold, Innovation Manager at Profund Innovation



Patents: Protecting intellectual property



PerformaNat GmbH, founded by Julia Rosendahl, Katharina Hille, and Hannah-Sophie Braun, develops and markets feed additives that support the natural metabolism of livestock and strengthen the animals' immune systems.

At the Institute of Veterinary Physiology at Freie Universität Berlin, research associate Julia Rosendahl managed to clarify certain mechanisms of action in the rumen of dairy cattle. Her discovery formed the basis for her idea for a natural feed additive that makes it easier for the animals to digest concentrated feed and improves their health. Even before the scientific publication had taken place, a strategy to protect intellectual property relating to the invention and a patent application had been drafted.

This kind of approach has many advantages for scholars, scientists, and researchers: Freie Universität takes responsibility for applying for and managing the patent and bears the costs. The patent application already counts as a publication. The application opens up possibilities to cooperate with industry partners and facilitates external fundraising. And it pays off – in the form of inventor's remuneration and a bonus paid to the

research group. In cases like Rosendahl's, where there are plans to commercialize the invention later on through a spin-off, the patent constitutes an important competitive edge.



Parameters for claiming an invention:

- Attractiveness of the market
- Patentability, including adequate protective scope and without easy circumvention
- Existence of specific potential licensees designated by name
- Team or department bears a share of the patent costs
- Invention forms the basis for a research project or a spin-off
- Completion of the existing internal patent portfolio



“Together with the Legal Affairs in Research and Transfer team, we clarify questions relating to intellectual property involving innovations. The PerformaNat example shows how a successful company can be created on the basis of an invention.”

Aneta Bärwolf, start-up and financing advisor at Profund Innovation

Other property rights: Authors and creators also have claims

Whether it is possible and sensible to file a patent for research findings, or whether other industrial property rights such as utility models and registered designs might be considered, is clarified by the Legal Affairs in Research and Transfer team at the Research Division of Freie Universität Berlin through patent search and consultation. Copyrights offer protection for software that is not patentable. Even other copyrighted works, such as texts, images, audio, music, data and the technical know-how of scholars, scientists, and researchers can also be commercialized under certain circumstances.

In the life sciences, know-how-based materials can also be commercialized, even if no patent application has been submitted. These include cell lines, mouse models, proteins, chemical compounds, DNA, and RNA.

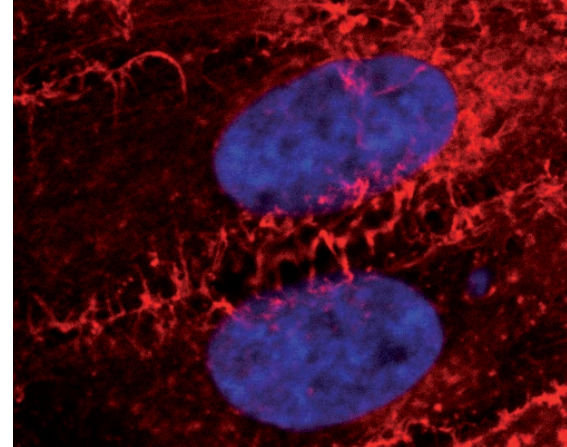
The researchers involved in developing these kinds of other objects also benefit from personal compensation as developers and from a bonus paid to their working group.

Guidelines for intellectual property

The Executive Board of Freie Universität Berlin adopted guidelines on the protection and commercialization of intellectual property in 2016.

These guidelines set out the following goals:

- Safeguarding the freedom of scientific research and commercialization for the benefit of society
- Securing legal attribution of intellectual property
- Demonstrating the university's research strength and supporting external fundraising
- Supporting the employability of junior scholars and scientists
- Obtain financial return
- Supporting start-ups



Even eukaryotic cell lines can be exploited as know-how.

“Professional clarification of intellectual property rights on a secure legal footing in advance of cooperative research arrangements is crucial to later exploitation of patents, copyrights, cell lines, and other things.”

Dr. Andreas Schoberth, Head of Team Legal Affairs in Research and Transfer



Support for start-ups: Money and networks help to start out



Through a Berlin Startup Grant, FLOURish has developed a method of reducing gluten in wheat dough. Thanks to EXIST funding, they can now adapt the method for industrial production.

When scientists, scholars, researchers, alumni, or students wish to launch their business idea on the market via their own company, they can turn to Profund Innovation for advice and assistance. Prospective founders with innovative, technology-based business ideas receive support when applying for an EXIST Business Start-up Grant from the German federal economic affairs ministry, for example: With a budget of up to 145,000 euros, three team members can work on their product and market launch for a year on campus. Between 2013 and 2017, 28 teams received *EXIST Business Start-up Grants* at Freie Universität. Two projects have benefited from the *EXIST Transfer of Research* program, which provides high six-figure sums in support of research-intensive start-up projects. Through their mentor, EXIST teams have access to the expertise of research groups.

Freie Universität, Technische Universität, Charité – Universitätsmedizin, and Humboldt-Universität

jointly award the *Berlin Startup Grant (Berliner Startup Stipendium)* to prospective founders who want to develop their prototypes to market readiness. The program is financed through funds from the Berlin Senate Department for Economics, Energy and Public Enterprises and the European Social Fund.

Networking with NUFUB



The best ideas are seldom the product of a single mind. Within and outside the university, Profund Innovation maintains connections with many people who support entrepreneurs. Alumni who have started their own businesses and other experienced entrepreneurs have joined forces in the *Netzwerk Unternehmertum of Freie Universität Berlin (NUFUB)* to provide volunteer support to newcomers. They get involved through mentoring, for example, or in regular network meetings.



“During the support period, we prepare our teams for the search for subsequent financing, offer pitch training, review business plans and recommend suitable competitions and matching events.”

Anne Kahnt, founder and start-up advisor at Profund Innovation

Space and labs: Room for ideas on campus

During the pre-founding phase, prospective entrepreneurs who have business ideas based on knowledge and technology can use well-equipped rooms and labs on campus free of charge. A professor's recommendation and a positive assessment of the start-up project from Profund Innovation are required.

Networking with B!GRÜNDET

The higher education institutions in Berlin join forces in the B!GRÜNDET start-up network. This shared coaching platform helps founders find the right specialists and coaches for their needs, quickly and easily. The people listed there are evaluated regularly. They have also promised to advise spin-offs on special terms. At the annual B!GRÜNDET Demo Day event, start-ups affiliated with higher education institutions meet up with established companies to explore shared interests.

A co-working space is also available for short-term needs. The co-working lab at the Department of Biology, Chemistry and Pharmacy offers lab workstations for research with prospects for commercialization. Thanks to support from the EXIST program operated by the German Federal Ministry for Economic Affairs and Energy, the five workstations have been equipped with the latest standard equipment for wet chemical and biochemical experiments, and five office workstations have been added.

The new Freie Universität incubator is located at Altensteinstraße 40. In the future, university start-ups will work there under the same roof as the employees of Profund Innovation and the Digital Entrepreneurship Hub. This site is immediately adjacent to the grounds of the planned FUBIC technology and start-up center, where young companies will find room to grow.



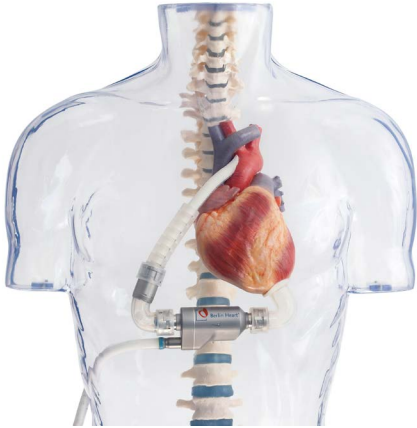
Research at the co-working lab focuses on various things, including charging graphene layers with positively or negatively charged polymers in order to capture viruses and bacteria.

“The start-up infrastructure is among the most important things a university that is friendly to founders can offer. Offices, labs, and co-working spaces on campus are crucial when it comes to networking with the research sector.”

Mariena Leitenberger,
administration for start-up infrastructure, support programs, and technology scouting



Business cooperation: Joint research and application



In one *KMU innovativ* project, the working group headed by chemistry professor Rainer Haag is developing new coatings for the artificial heart pumps of Berlin Heart GmbH.

When industry and the research sector work together, there are benefits for all concerned. Researchers gain access to new topics, research designs, and external funding, while companies value the scientific expertise and infrastructure supplied by the university. Cooperative initiatives lay the groundwork for successes on the market and bring more of real-world practice to education.

Cooperation in research and development is eligible for funding from support programs such as the BMWi's *Central Innovation Programme for SMEs* (ZIM) or the BMBF's *KMU innovativ* program, which is geared toward innovative SMEs. Employees of the research division at Freie Universität Berlin help to bring the right partners together. They monitor and support the joint innovation process and assist with drafting funding applications.

At the *Industry on Campus* event, research groups from the life sciences and natural sciences at Freie

Universität network with large companies. When the academic and industrial sectors do research in similar fields, they make progress faster together. With this objective, strategic cooperative initiatives can be conducted in forms such as joint labs in the future, including on a long-term basis.

But many companies are looking for more than just dialogue with researchers affiliated with the university; they want to work together with university spin-offs. At networking events and in response to specific inquiries, they can get in touch with spin-offs from Freie Universität. For example, employees of Deutsche Bahn AG have participated several times in an event called *Start-up Safari*, which has brought them to the incubators on campus for several days each time.

FUBIC: An Innovation Hub in the southwest of Berlin

In the future, the connections between academia and the business sector will be even closer. The FUBIC technology and start-up center is slated for construction on the grounds of the former U.S. military hospital on Fabbeckstraße. The abbreviation stands for *Business Innovation Center next to Freie Universität Campus*.

More than 50 companies founded

With support from Freie Universität Berlin, more than 50 corporations were founded between 2013 and 2017. Start-ups in information and communication technology, the media and creative sector, and healthcare dominate the group. Overall, start-ups affiliated with higher education institutions in the Berlin metro area have created 22,000 jobs and earned three billion euros in annual sales. This is the result of a 2016 analysis of start-up activities associated with the nine higher education institutions in the area.



It is intended as a home for 60 to 80 young, technology-based companies with 1,000 employees in all, located right next to the campus of Freie Universität Berlin.

The start-up center is part of an innovation park occupying about 50,000 square meters, where space for established high-tech companies is also planned. Wista-Management GmbH, which also operates the Berlin Adlershof science and technology park, has been tasked with building and operating the innovation park.

Freie Universität Berlin is one of the driving forces behind the FUBIC site. As an innovator, it helps to ensure that modern work space for the knowledge-based industry can arise in a leafy residential setting like Dahlem. The FUBIC will offer scholars, scientists, researchers, and students ideal conditions for starting a business.



Most of the costs of building the FUBIC facility will come from funding provided by the *Joint Federal Government/Länder Scheme for the Improvement of Regional Economic Structures (GRW)*.

“The FUBIC will offer our spin-offs room to grow while benefiting from synergies on campus.”

Steffen Terberl, head of Profund Innovation





Besser
gründen
im Netzwerk

Under the motto *Entrepreneurial Network University*, Freie Universität Berlin and Charité – Universitätsmedizin Berlin strengthened the start-up culture on campus with lasting effects from 2013 until March 2018. The strategy won distinction from the German Federal Ministry for Economic Affairs and Energy in the *EXIST Culture of Entrepreneurship – Entrepreneur University* competition. The implementation was co-financed with funding provided by the German federal government.

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