Press release

Technische Universität Berlin

Stefanie Terp

09/27/2018 http://idw-online.de/en/news703022

Research projects, Science policy Chemistry, Environment / ecology, Information technology, Mathematics, Politics transregional, national

Outstanding Research in Berlin

Joint press release by Freie Universität Berlin, Humboldt-Universität zu Berlin, Technische Universität Berlin, and Charité – Universitätsmedizin Berlin Seven Clusters of Excellence approved in the Excellence Strategy of the German federal and state governments

In the Excellence Strategy research competition run by the German federal and state governments, seven Clusters of Excellence of Freie Universität Berlin, Humboldt-Universität zu Berlin, Technische Universität Berlin, and Charité – Universitätsmedizin Berlin have been adopted in total. Starting in 2019, the interdisciplinary research projects will be funded each for seven years with up to ten million euros per annum, as declared in Bonn. After the first seven years, with a renewal proposal, it may be possible to extend the funding a further seven years. The institutions submitted nine proposals in total. These decisions also fulfill the prerequisite for the planned collaborative proposal by the four institutions in the Excellence Strategy.

The presidents of the participating Berlin universities and the Chief Executive Officer of Charité stated, "The approval of seven clusters in the Excellence Strategy is a resounding success for our scholars and scientists, for the research in the Berlin University Alliance, and for Berlin as a center of science and research. We are firmly convinced that our academic expertise will contribute to finding groundbreaking answers to the challenges of our time." The heads of the universities and Charité thanked everyone involved in the proposals for their huge commitment, already making a significant contribution to the further development of Berlin as a center of science and research.

PROJECT SPECIFICS:

MATH+ How Berlin mathematics is shaping the future

MATH+, the Berlin Mathematics Research Center, is a cross-institutional and transdisciplinary Cluster of Excellence where researchers will explore and further develop new approaches in application-oriented mathematics. Emphasis is placed on mathematical principles for using even larger amounts of data in life and material sciences, in energy and network research, and in the humanities and social sciences. The aim is to boost not only scientific progress, but also technological innovation and the comprehensive understanding of social processes. MATH+ is a joint project of the three major universities in Berlin – Freie Universität Berlin, Humboldt-Universität zu Berlin, and Technische Universität Berlin – and integrates, both conceptually and structurally, the Weierstrass Institute for Applied Analysis and Stochastics and the Zuse Institute Berlin. It continues the success stories of the renowned MATHEON Research Center and of the Berlin Mathematical School, which has been supported by the Excellence Initiative since 2006.



idw - Informationsdienst Wissenschaft Nachrichten, Termine, Experten

Spokespersons: Prof. Dr. Christof Schütte (Freie Universität Berlin), Prof. Dr. Michael Hintermüller (Humboldt-Universität zu Berlin), Prof. Dr. Martin Skutella (Technische Universität Berlin) Applicant universities: Freie Universität Berlin, Humboldt-Universität zu Berlin, Technische Universität Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/math/index.html

Matters of Activity: Image Space Material A new culture of material

The Matters of Activity cluster aims to establish the foundation for a new material culture. The project's central vision is to develop images, spaces, and materials as active structures of a new physical and symbolic reality, in which nature and culture intertwine in a novel way. In this context, interdisciplinary research and development of sustainable processes and structures is a key priority in all areas of visual-material character, such as wearables, materials technology, medical technology, logistics, architecture, and robotics. More than 40 disciplines are systematically investigating design strategies for materials and structures that adapt to specific requirements and the environment. The cluster relies on a new role for design within the context of growing diversity and the continuous improvement of materials and forms of visualization in all disciplines.

Spokesperson: Prof. Dr. Wolfgang Schäffner (Humboldt-Universität zu Berlin) Applicant university: Humboldt-Universität zu Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/matters-of-activity/index.html

NeuroCure

Comprehensive approaches to neurological and psychiatric disorders - from mechanisms to interventions

The neuroscience Cluster of Excellence NeuroCure at Charité - Universitätsmedizin Berlin has been funded since 2007 within the framework of the Excellence Initiative of the German federal and state governments and can now continue its successful work. Research into neurological and psychiatric disease mechanisms and the transfer of basic scientific findings to clinical application – in short, translation – are at the heart of this interdisciplinary and international consortium. In the future, NeuroCure will focus on projects covering the entire life span – from embryonic development to aging – and establish new innovative modules that accelerate the translational process. NeuroCure is based at Charité - Universitätsmedizin Berlin, the joint medical school of Freie Universität Berlin and Humboldt-Universität zu Berlin, and cooperates closely with several non-university research institutions including the German Institute of Human Nutrition Potsdam-Rehbrücke (DIFE), the Leibniz-Forschungsinstitut für Molekulare Pharmakologie (FMP), and the Max Delbrück Center for Molecular Medicine (MDC). Cooperation with the two translational research centers, the Berlin Institute of Health (BIH) and the German Center for Neurodegenerative Diseases (DZNE), also is to be expanded further.

Spokesperson: Prof. Dr. Dietmar Schmitz (Charité – Universitätsmedizin Berlin) Applicant universities: Freie Universität Berlin and Humboldt-Universität zu Berlin as universities with their joint medical faculty Charité – Universitätsmedizin Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/neurocure/index.html

Science of Intelligence (SCIoI)

Learning to understand intelligence

Science of Intelligence, a joint Cluster of Excellence of Technische Universität Berlin and Humboldt-Universität zu Berlin, is focusing on better understanding intelligence in all its facets: which fundamental laws and principles underlie different forms of intelligence – whether it be artificial, individual, or collective intelligence? The scientists from the most diverse disciplines – from psychology, robotics, and computer science to philosophy and behavioral research – want to use their research results to create new intelligent technologies. The cluster's methodological strategy is a new approach in intelligence research in which all knowledge, methods, concepts, and theories must be incorporated into technological artifacts, such as robots or computer programs. These artifacts serve as a common "language" that is intended to facilitate scientific exchange across disciplinary boundaries.

Spokesperson: Prof. Dr. Oliver Brock, Technische Universität Berlin Applicant universities: Technische Universität Berlin, Humboldt-Universität zu Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/scioi/index.html

Contestations of the Liberal Script (SCRIPTS) Global Challenges for the Model of Liberal Democracy and Market Economy

After the end of the Cold War, liberal democracy seemed to have prevailed for good. Today, 25 years later, however, the liberal model of political and economic order faces a profound crisis. Authoritarian leaders including Russian president Vladimir Putin, Hungarian Prime Minister Viktor Orbán, the Secretary General of the Communist Party of China, Xi Jinping, as well as non-state fundamentalist groups such as the Islamic State openly operate as antagonists of the liberal model. At the same time, right-wing populist movements like the Alternative for Germany (AfD) gain strength by attacking the very foundations of liberalism within liberal societies. Transnational networks connect authoritarian leaders and right-wing populists. The Cluster of Excellence Contestations of the Liberal Script (SCRIPTS) analyzes the contemporary controversies about the liberal order from a historical, global, and comparative perspective. What are the causes of the current contestations? How do they differ from earlier crises? What are the consequences for democracy and the global challenges of the 21st century?

Spokespersons: Prof. Dr. Tanja Börzel (Freie Universität Berlin), Prof. Dr. Michael Zürn (Wissenschaftszentrum Berlin) Applicant university: Freie Universität Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/scripts/index.html

Temporal Communities – Doing Literature in a Global Perspective A new concept of literature across the boundaries of periods, cultures and media

The cluster Temporal Communities – Doing Literature in a Global Perspective aims to radically rethink the concept of literature in a global perspective which requires us to overcome traditional categories of literary history such as 'period' and 'nation'. In a global perspective, literature is perceived as a phenomenon that reaches out through time, thus calling into question traditional cultural and linguistic boundaries. As a global phenomenon, literature displays a remarkable degree of complexity and fluidity as it engages in constant exchange with other arts and cultural practices. We are no longer concerned with traditional notions such as the 'great poet' and his 'works' but rather with literature's capacity for establishing communities across time that undermine the concept of the literary as developed within modern Western societies.

Spokespersons: Prof. Dr. Anita Traninger (Freie Universität Berlin), Prof. Dr. Andrew James Johnston (Freie Universität Berlin) Berlin) Applicant university: Freie Universität Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/temporal-communities/index.html

Unifying Systems in Catalysis (UniSysCat) How to Understand and Utilize Networks in Catalysis

More than 85 percent of all products come into contact with a catalyst during production. Catalysis research is therefore not only regarded as one of the most important research areas in chemistry, it is also the main driver of "green chemistry," which focuses on sustainability and resource conservation. The UniSysCat Cluster of Excellence, proposed by Technische Universität Berlin, will play a key role in Germany and can build on ten years of outstanding work by UniCat, the previous cluster of the Excellence Initiative. Individual catalytic reactions are already well understood in many cases. The challenge now is to decipher reaction networks in chemical and biological catalysis in space and time so that they can then be controlled, predicted and modified. Which key parameters enable and control chemocatalytic and biocatalytic networks? How can chemical and/or biological processes be coupled to create catalytic systems with new functions? These are the central research questions of UniSysCat.

Spokespersons: Prof. Dr. Matthias Driess (Technische Universität Berlin), Prof. Dr. Arne Thomas (Technische Universität Berlin), Prof. Dr. Peter Hildebrandt (Technische Universität Berlin) Applicant university: Technische Universität Berlin

https://www.berlin-university-alliance.de/en/excellence-strategy/proposals/unisyscat/index.html

Media contacts: Goran Krstin Press Spokesperson for the President Freie Universität Berlin Phone: +49 30 838-731 06 Email: goran.krstin@fu-berlin.de

Hans-Christoph Keller Spokesperson of Humboldt-Universität zu Berlin Phone: +49 30 2093-2345 Email: pr@hu-berlin.de

Stefanie Terp Press Spokesperson Technische Universität Berlin Phone: +49 30 314-23922 Email: pressestelle@tu-berlin.de

Manuela Zingl Press Spokesperson Charité – Universitätsmedizin Berlin Phone: +49 30 450 570 400



Email: presse@charite.de

Note: Press images will gladly be made available to media representatives upon request.

Link: http://www.berlin-university-alliance.de

Twitter: @BerlinUAlliance