PIERPLUS

PARTNERSHIP FOR

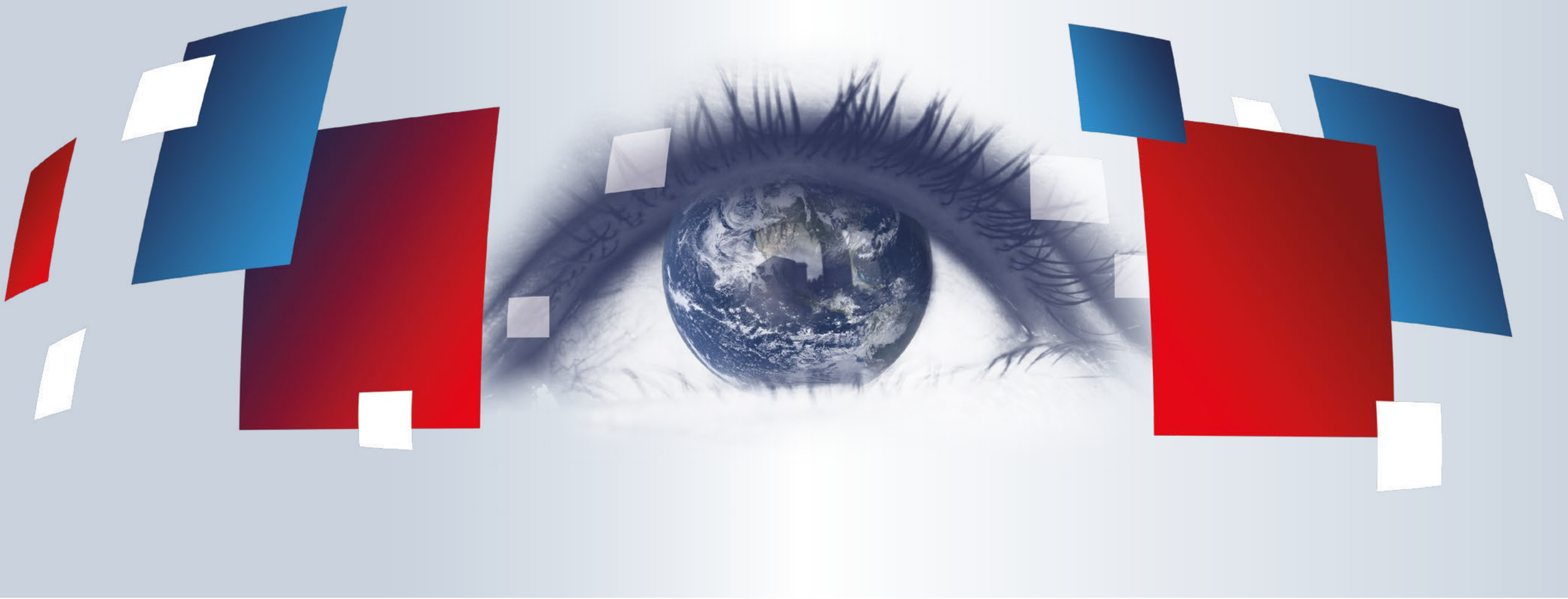
Innovation, Education and Research PLUS

PIER PLUS

PIER stands for **Partnership for Innovation, Education and Research**. PIER PLUS focuses on Hamburg and views itself as our metropolitan region's scientific platform. Led and coordinated by University of Hamburg, PIER PLUS promotes and strengthens collaboration and networking between universities and independent research institutes.

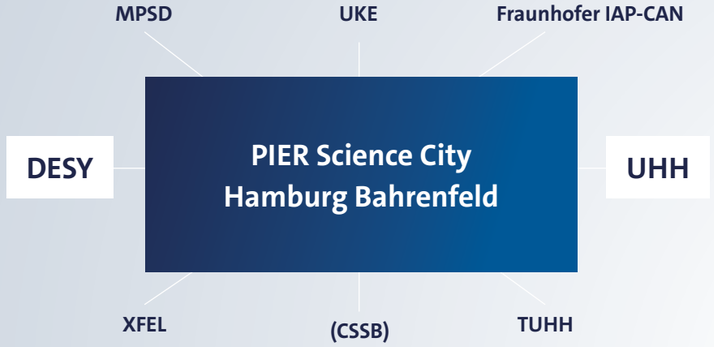
The objectives of PIER PLUS:

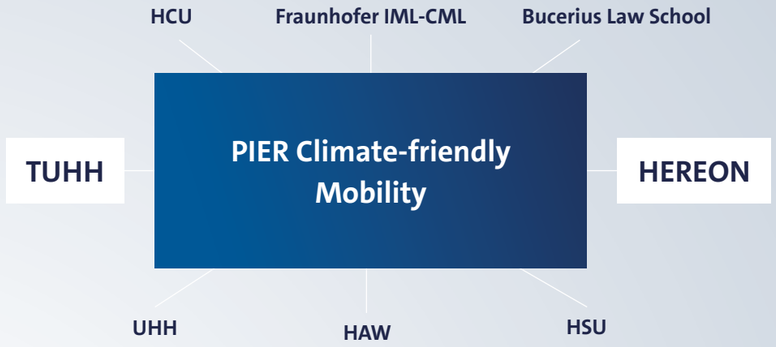
- to promote collaborative research at the highest level
- to make research findings visible
- to strengthen Hamburg's position as a scientific center

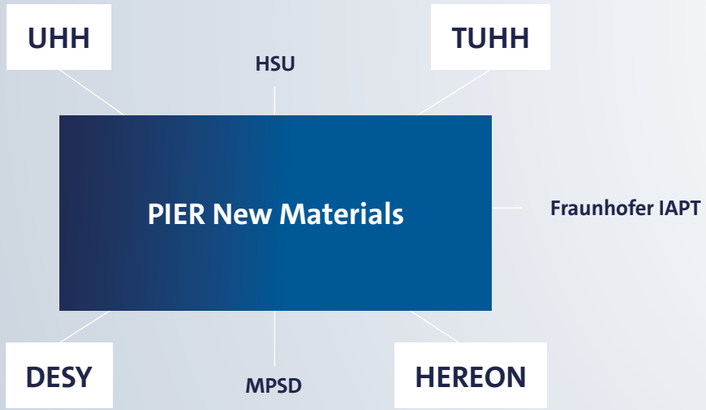


PIER PLUS

Structure and Partners







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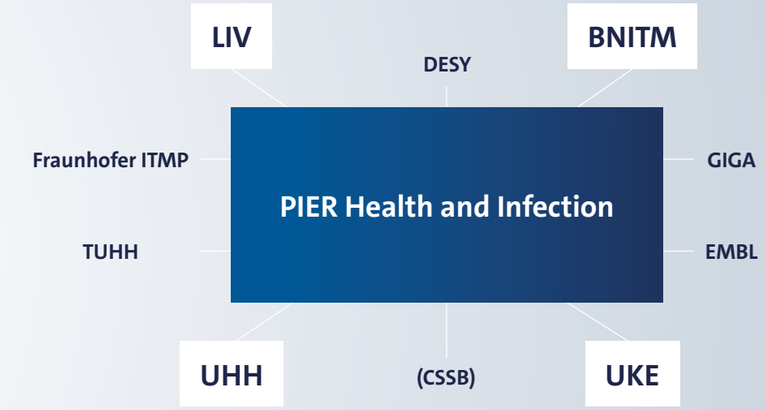
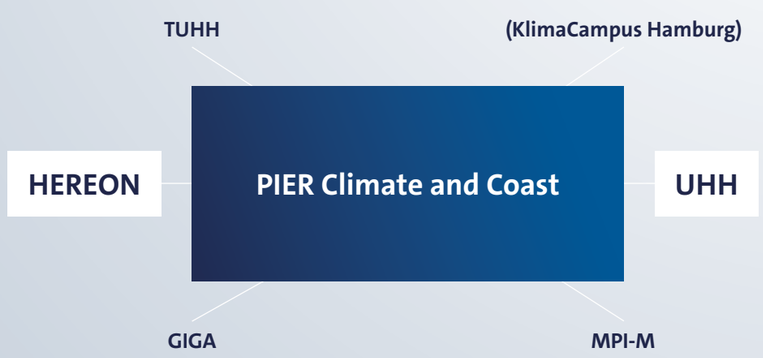




PIER PLUS

Steering Committee and Structure

PIER PLUS brings together the Hamburg Metropolitan Region's key scientific players. At the PIER PLUS Steering Committee, the partners' leading representatives regularly meet. In a collegiate and trust-based setting, the committee members work together to identify opportunities for joint action with politics and society. The PIER PLUS Steering Committee has an additional task of defining the PIER PLUS profiles and appointing spokespersons and board members. The PIER PLUS profiles are also represented in the PIER PLUS Steering Committee through their spokespersons and chairpersons.

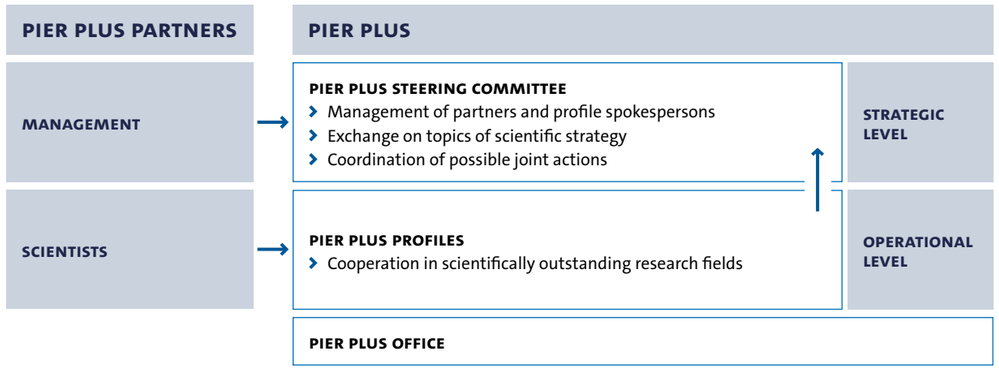
At an operational level, academics with proven track records work together in research fields of high relevance – the PIER PLUS profiles:

- PIER SCHB
- PIER Health and Infection
- PIER Climate and Coast
- PIER Conflict, Cooperation and Security
- PIER Climate-friendly Mobility
- PIER New Materials

The PIER PLUS profiles are supplemented by inter-profile collaboration in:

- PIER Computing & Data Science
- PIER Innovation and Knowledge Exchange
- PIER Scientific Communication
- PIER Support of Early Career Researchers
- PIER Research Infrastructure

The PIER PLUS office supports the profile boards and PIER PLUS Steering Committee.



PIER PLUS

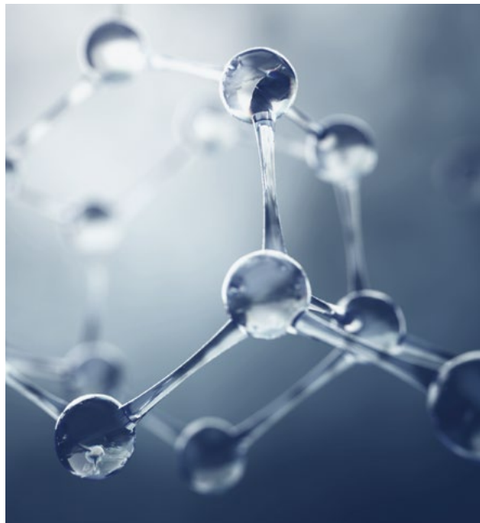
Seed Fund

The PIER PLUS Seed Fund is an important instrument that is used to fund collaborative research. The fund's aim is to support the individual PIER PLUS profiles and promote joint research projects between partners.

PIER PLUS Seed Fund is comprised of funding provided by the profile's participating partners. To improve its efficacy, the PIER PLUS Seed Fund is primarily structured and implemented at the level of the individual PIER PLUS profiles. This supports collaboration between the partners in subject areas of proven scholarly merit and allows funding formats to be aligned with those of the corresponding academic community.

The profile boards inform the PIER PLUS Steering Committee about planned funding formats and report on funded projects.

Responsibility for coordinating and monitoring the PIER PLUS Seed Fund lies with the PIER PLUS office.



PIER PLUS

Profiles

The operational collaboration between PIER PLUS partners is currently coordinated on the basis of **six different profiles**. The profiles are characterized by their interdisciplinary and multi-perspective approach and are particularly relevant to Hamburg. Working within these profiles, the region's key academic institutions play their part in addressing each topic, thereby adding a new structural level to the long-standing and diverse partnerships that already exist in Hamburg.

PIER

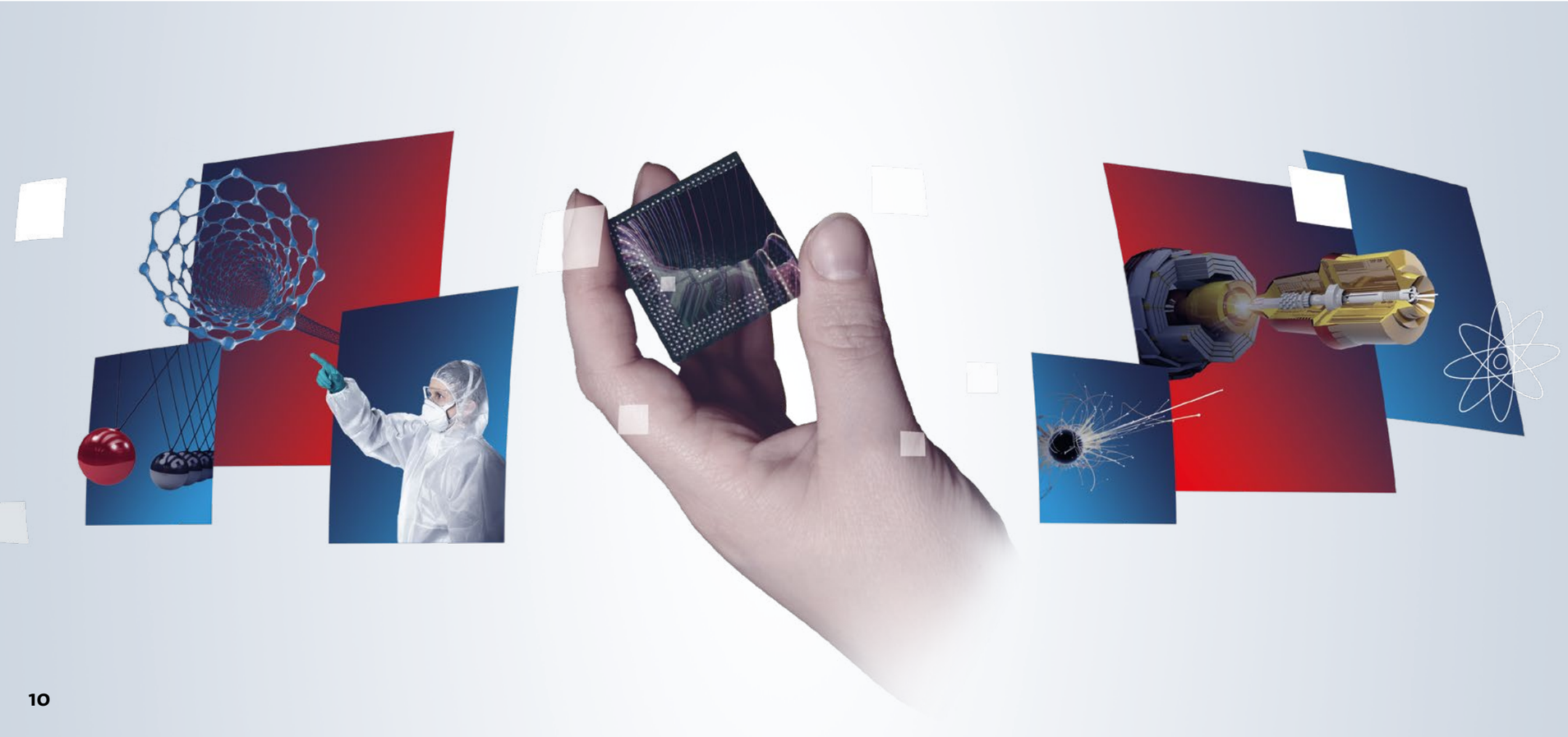
Science City Hamburg Bahrenfeld

PIER was founded in 2011 as a strategic partnership between University of Hamburg and DESY with the aim of expanding the long-running, successful collaborative research between the two institutions to include additional areas. The major “Science City Hamburg Bahrenfeld” project, in which DESY and University of Hamburg are involved in partnership with the City of Hamburg, provides a shining example of this success: The new “Science City” in the Bahrenfeld district is set to combine world-class international research, university education, and innovative companies with vibrant residential neighborhoods in a truly special way. PIER is represented as PIER Science City Hamburg Bahrenfeld (PIER SCHB) within the PIER PLUS network in reference to this forward-looking project.

Cooperative research

Academics from DESY and University of Hamburg collaborate in the following research fields within PIER SCHB: particle and astroparticle physics, nanoscience, photon science, and infection and structural biology, as well as in the intersecting specialist fields of theoretical physics and accelerator research.

For more information on the collaboration and activities taking place as part of PIER SCHB, especially in the areas of research, innovation, and supporting young academics, please visit the profile’s website.



SCIENTIFIC DIRECTION

Chairperson of the board:
Prof. Dr. Francesca Calegari
(DESY/Photon Science)

Profile board

- Prof. Dr. Francesca Calegari (Photon Science, DESY)
- Dr. Ties Behnke (Particle and astroparticle physics, DESY)
- Prof. Dr. Günter Sigl (Particle and astroparticle physics, University of Hamburg)
- Dr. Saša Bajt (Nanoscience, DESY)
- Prof. Dr. Alf Mews (Nanoscience, University of Hamburg)
- Prof. Dr. Andreas Hemmerich (Photon Science, University of Hamburg)
- Prof. Dr. Chris Meier (Infection and structural biology, University of Hamburg)
- Prof. Dr. Markus Glatzel (Infection and structural biology, UKE)
- Prof. Dr. Wim Leemans (Accelerator research, DESY)
- Prof. Dr. Wolfgang Hillert (Accelerator research, University of Hamburg)
- Prof. Dr. Volker Schomerus (Theoretical Physics, DESY)
- Prof. Dr. Michael Thorwart (Theoretical Physics, University of Hamburg)
- Prof. Dr. Daniela Pfannkuche (Spokesperson of the PIER Helmholtz Graduate School)
- Prof. Dr. Nils Huse (Innovation, University of Hamburg)

Contact to the PIER SCHB Office

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PARTNERS

PIER

PIER Health and Infection

In Hamburg there are a large number of long-standing and closely interlinked partnerships between universities and independent research institutes which promote highly regarded infection research at both a national and international level. In addition to infection research, the PIER PLUS partners are cooperating in three other clearly defined areas: In healthcare research, in medical technology and bioinformatics and in cancer research.

Cooperative research

PIER Health and Infection aims to bring together and promote existing research on the structural biology of pathogens and infected cells with broader biomedical basic research and clinical research in Hamburg. In addition to infection research, the profile also focuses on healthcare research, medical technology and bioinformatics and cancer research. The areas of health economics and health communication as well as ethical issues also play a major role. In addition, current research topics are to be identified on a cross-institutional and interdisciplinary basis.

As PIER Health and Infection's lead partners, the University Medical Center Hamburg-Eppendorf (UKE) and Universität Hamburg, together with the Leibniz Institute of Virology (LIV) and the Bernhard Nocht Institute for Tropical Medicine (BNITM), bring together the most important research strands. EMBL Hamburg complements this research collaboration as an associated partner of the profile with its outstanding structural biology methods. The addition of the experimental structure research facilities at Science City Hamburg Bahrenfeld (CSSB, DESY) means that research into all aspects of infectious diseases can be conducted within the Hamburg Metropolitan Region.

At the same time, successfully established collaborative research networks are mapped, including broad existing cooperative relationships such as between UKE and LIV, or initiatives such as the Leibniz Centre Infection (LCI) (together with Research Center Borstel) and Leibniz ScienceCampus InterACt, to create an interdisciplinary and inter-institutional science campus. In the field of applied transnational research, the UKE and Universität Hamburg, together with other university and independent partners, form one of seven German Center for Infection Research (DZIF) sites. The Center for Inflammation, Infection and Immunity (C3i) also brings together a large proportion of the PIER PLUS partners in the field of infection research.

For more information, please visit the profile's website.

SCIENTIFIC DIRECTION

Profile spokesperson
Prof. Dr. Blanche Schwappach-Pignataro (UKE)

Profile board
- Prof. Dr. Holger Sondermann (DESY/CSSB)
- Prof. Dr.-Ing. Tobias Knopp (TUHH/UKE)
- Prof. Dr. Tobias Lenz (UHH)
- Dr. Dewi Ismajani Puradiredja (BNITM)

PARTNERS

Universität Hamburg – Der Forschung | Der Lehre | Der Bildung
UKE Hamburg
LIV Leibniz-Institut für Virologie
BNITM Bernhard-Nocht-Institut für Tropenmedizin
DESY.
GIGA German Institute for Global and Area Studies
TUHH
Fraunhofer ITMP
EMBL
CSSB Centre for Structural Systems Biology

PIER

Climate and Coast

Climate change resulting from human activity causes risks to ecosystems and people and brings about an unavoidable increase in numerous different climate-related dangers. At the same time, there is also a wide range of potentially attractive solutions.
The aim of PIER Climate and Coast is to strengthen the solution-oriented communication of research results in Hamburg and to promote transformative research into the conditions that are necessary for building a resilient, climate-neutral society.

Cooperative research

Questions about global climate change, its complex and cascading consequences, and corresponding solutions can only be researched from a range of different perspectives. Consequently, interdisciplinary climate research in Hamburg is conducted on the basis of diverse and long-standing partnerships between universities and research institutes: academics from the natural sciences, humanities, and social sciences work together in academic working groups and research projects, including the Climate, Climatic Change and Society (CLICCS) cluster of excellence, to investigate the causes and consequences of climate change.

In order to draw on the wide-ranging collaboration taking place in Hamburg, the lead partners University of Hamburg and Helmholtz-Zentrum Hereon have joined forces with Hamburg University of Technology (TUHH), the German Institute for Global and Area Studies (GIGA), and the Max Planck Institute for Meteorology (MPI-M) to form the framework for PIER Climate and Coast. The profile's activities are also anchored in the existing KlimaCampus Hamburg network.

For more information, please visit the profile's website.

SCIENTIFIC DIRECTION

Profile spokesperson
Prof. Dr. Daniela Jacob
(Helmholtz-Zentrum Hereon)

Profile board
- Prof. Dr. Hermann Held (UHH)
- Prof. Dr. Ing. Peter Fröhle (TUHH)
- Prof. Dr. Miriam Prys-Hansen (GIGA)

PARTNERS

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

Helmholtz-Zentrum hereon

GIGA German Institute for Global and Area Studies Leibniz-Institut für Globale und Regionale Studien

MAX-PLANCK-INSTITUT FÜR METEOROLOGIE

TUHH

KlimaCampus Hamburg

PIER

Conflict Cooperation, and Security

Wars, climate change, pandemics, and increasing global economic tensions pose major global challenges to peace and security. PIER Conflict and Coordination addresses relevant research questions in these areas and brings together research into peace, security, violence, and conflict by both university and independent actors within the wider Hamburg research community. Interdisciplinary research is hugely important here: the expertise of actors in the fields of natural sciences, humanities, social sciences, and law is combined to achieve comprehensive, differentiated research results.

Cooperative research

The PIER Conflict and Coordination profile provides the overall framework for the various research activities conducted in Hamburg in the area where "coordination" and "conflict" intersect. Under the leadership of the University of Hamburg, the German Institute of Global and Area Studies (GIGA) and the MPI for Comparative and International Private Law Hamburg, PIER Conflict, Cooperation and Security, together with the Institute for Peace Research and Security Policy (IFSH), the Helmut Schmidt University and the Leibniz Institute for Media Research Hans-Bredow-Institut, tackle research questions dealing with subjects such as:

- conflicts, fragility, violence
- international peace and security orders
- democracy, social peace, and domestic security
- arms control
- IT security of interlinked systems, critical infrastructures.

In times of crisis (or crises), many of the academics involved become sought-after discussion and interview contributors in the media as well as in public discussions on a range of themes. In addition to the scholarly examination of these crises, several of the institutions involved also strive to keep politicians and the public informed about assessments and evaluations from an academic perspective by publishing policy papers and shorter statements.

For more information, please visit the profile's website.

SCIENTIFIC DIRECTION

Profile spokesperson
Prof. Dr. Ursula Schröder (IFSH)

Profile board

- Dr. Christian von Soest (GIGA)
- Prof. Dr. Ralf Michaels (MPI-Privatrecht)
- Prof. Dr. Markus Kotzur (UHH, Faculty of Law)
- Prof. Dr. Hannes Federrath (UHH, MIN Faculty)

PARTNERS

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

GIGA
German Institute for Global and Area Studies
Leibniz-Institut für Globale und Regionale Studien

MAX-PLANCK-INSTITUT
für ausländisches und internationales
PRIVATRECHT HAMBURG

HELMUT SCHMIDT
UNIVERSITÄT
Universität der Bundeswehr Hamburg

LEIBNIZ-INSTITUT
FÜR MEDIENFORSCHUNG
HANS-BREDOW-INSTITUT

IFSH
Institut für Friedensforschung
und Sicherheitspolitik
an der Universität Hamburg

PIER

Climate-friendly Mobility

The challenges associated with providing mobility that produces fewer greenhouse gases represent some of the key research questions in the context of climate change. PIER Climate-friendly Mobility therefore focuses on the issue of how mobility can be designed to reduce its reliance on fossil fuels and thus be more environmentally friendly. Against this backdrop, PIER Climate-friendly Mobility brings together various research topics from the fields of engineering, natural sciences, business sciences, and social sciences to form an interdisciplinary approach, expanding potential technical solutions to include research into social components.

Cooperative research

PIER Climate-friendly Mobility academics tackle a wide range of research questions concerning "green mobility", particularly the climate-friendly transportation of people and goods in metropolitan regions, greenhouse gas-free long-distance freight transport, and the question of how intercontinental air and maritime traffic can be made more climate-friendly.

PIER Climate-friendly Mobility, under the leadership of the Hamburg University of Technology and Helmholtz-Zentrum Hereon, builds on many years of collaborative research efforts between various research institutes in Hamburg. In collaboration with its partners – University of Hamburg, the Fraunhofer Center for Maritime Logistics and Services, Helmut Schmidt University, Bucerius Law School and HafenCity University – the profile brings together current research questions.

For more information, please visit the profile's website.

SCIENTIFIC DIRECTION

Profile spokesperson
Prof. Dr. Martin Kaltschmitt
(TUHH)

Deputy profile spokesperson
Prof. Dr.-Ing. Thomas Klassen
(Hereon/HSU)

PARTNERS

TUHH
Helmholtz-Zentrum hereon
UH Universität Hamburg DER FORSCHUNG | DER LEHRE | DER BILDUNG
Helmut Schmidt Universität Universität der Bundeswehr Hamburg
HAW Hamburg
Fraunhofer CML
Bucerius Law School
hcu HafenCity Universität Hamburg

PIER

New Materials

With the primary objective of developing new, sustainable materials, the partners in Hamburg work together in established and co-founded centers, such as the Center for Integrated Multiscale Materials Systems (CIMMS), Center for Hybrid Nanostructures (CHyN) and Zentrum für Hochleistungsmaterialien (ZHM), as part of PIER New Materials.

Cooperative research

The fundamental goal is to develop functional nanomaterials and three-dimensional, multi-scale, and multifunctional material systems. These integrated materials systems differ fundamentally from existing materials in that – as with natural, biological materials – they can perform different functions from what is effectively a single source. This then allows for multifunctional optimization within a material system, which, in reducing chemical diversity, results in more sustainable materials management for new technological developments in the fields of energy, mobility, and medicine. Researchers from the profile are also involved in three clusters of excellence at University of Hamburg and TUHH.

For more information, please visit the profile's website.

SCIENTIFIC DIRECTION

Profile spokesperson
Prof. Dr. Patrick Huber
(DESY/TUHH)

Deputy profile spokesperson
Dr. Wolfgang Parak (UHH)

Profile board

- Prof. Dr.-Ing. Christian Cyron (Hereon/TUHH)
- Prof. Dr. Michael Fröba (UHH)

PARTNERS

TUHH

hereon Helmholtz-Zentrum

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

DESY.

Helmut Schmidt Universität
Universität der Bundeswehr Hamburg

MAX-PLANCK-INSTITUT
FÜR STRUKTUR UND DYNAMIK DER MATERIE

Fraunhofer
IAPT

PIER PLUS

Collaboration

The PIER PLUS profiles are supplemented by **five inter-profile topics** that are relevant to all research fields and partners. They relate to the areas of Computing & Data Science, Innovation & Knowledge Exchange, Science Communication, Support of Early Career Researchers and Research Infrastructure.

Common fields of action

Computing & Data Science

As basic research in the fields of AI and data science progresses at unprecedented speed, findings that are considered established and proven are increasingly being rolled out to specific applications. To do justice to this development, exploit synergistic effects, and ensure the ongoing preservation of methodological expertise, service facilities have been created at a number of institutions to enable and advance digitalization in scholarship.

Participating partners
In the Hamburg metropolitan region, the Hub of Computing and Data Science (HCDS) at the Universität Hamburg has already established such an institution, which was conceptually modelled after the Hamburg X project: Center for Data and Computing in Natural Science (CDCS) (participating partners: Universität Hamburg, Hamburg University of Technology, DESY). Helmholtz Imaging Platform (HIP) operates at DESY specifically on the subject of image processing. The TUHH is home to the interfaculty initiative Machine Learning in Engineering (MLE) (participation: Hereon). For the promotion of young researchers, there are two graduate schools that involve many partners: the joint DASHH-Graduiertenschule (Data Science in Hamburg Helmholtz Graduate School for the Structure of Matter), and the Hamburg VISTA School Of Graduate Research (VISOR) for Artificial Intelligence in Science and Technology.

Current Activities
Cooperation is currently supported by two structures:

- The Kiez of Computing and Data Science brings together people from many institutions that apply computing, data science and artificial intelligence in their respective contexts. This is where individuals across institutions can situate themselves and exchange ideas and pool their expertise. The “Kiez” operates an event calendar for relevant events in the Hamburg Metropolitan region and beyond.
- The Hamburg Virtual Initiative for Science & Technology in AI (Hamburg VISTA) was launched to make the existing synergies between the PIER PLUS institutions at the interface of artificial intelligence and its application in the natural sciences and engineering visible. The initiative operates the VISOR graduate school. To strengthen interdisciplinary cooperation in research, its funded and associated doctoral students are each supervised jointly by two VISTA researchers; the character of VISTA as an inter-institutional graduate school is underlined by the organization of events and networking events. By bringing together cutting-edge research in artificial intelligence, as well as methodological expertise, further education and training opportunities, scientific events, job offers and much more, Hamburg is further strengthening its position as an attractive location for pioneering topics in digitization and automation in science.

Innovation & Knowledge Exchange

The variety of topics covered by the PIER PLUS profiles makes a broad understanding of transfer necessary. Through the development of spaces of interaction and exchange PIER PLUS stresses the needed interconnection between the different target groups in (digital) meetings.

Support of Early Career Researchers

The PIER PLUS partners have also committed to work together to support young academics. The most important institution in this regard is the Hamburg Research Academy (HRA), which combines the forces of nine of Hamburg’s universities to provide advice and support to Hamburg’s young academics in a multidisciplinary manner. Other PIER PLUS partners are associate members of the HRA.

Science Communication

Clear science communication for Hamburg requires mutual dialog between partners and social actors. This is why PIER PLUS partners have agreed to collaborate in the area of science communication. PIER PLUS is also involved in cross-location communication activities and communicates itself via the PIER PLUS newsroom and the PIER PLUS LinkedIn page.

Research Infrastructure

The use of (large scale) equipment in technology platforms is becoming increasingly important in providing researchers with efficient and sustainable scientific instruments and services. A collaborative partnership within the PIER research infrastructure offers the opportunity to harness synergies in the utilization of equipment and expert support, thereby optimally aligning with the needs of scientific actors in the Hamburg metropolitan region.

PIER PLUS

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