Renewed funding for “Hearing4all” Excellence Cluster

The University of Oldenburg has been successful with its application for the Excellence Strategy funding line: the Cluster of Excellence “Hearing4all: Medicine, Basic Research and Engineering Solutions for Personalized Hearing Care” has been awarded funding for the next seven years. Based on their proposal the Oldenburg scientists, together with hearing researchers from Hannover, applied for 55 million euros to finance the project. Across Germany a total of 45 Clusters of Excellence have been awarded funding through the Excellence Strategy programme. Hearing loss is the most frequent chronic ailment to affect the human senses. The goal of the team of researchers led by Oldenburg-based hearing care researchers will develop personalised solutions tailored for the requirements of individual patients, the fourth will create a brand new research centre, the second research line aims to construct a multilingual virtual hearing clinic. In the third, the researchers will develop personalised diagnosis and treatment procedures for patients with moderate to severe hearing loss and complete deafness. Based on the findings of these activities, the fourth will create a brand new technology for hearing aids of the future. “Hearing4all” is one of the world’s leading centres in medical technology, hearing research, audiology, and medical diagnostics and therapy. The team comprises twenty-five neuroscientists, physicians, psychologists, linguists, physicists and engineers from the universities of Oldenburg and Hannover and also Hannover Medical School. The Jade University of Applied Sciences, HorTech GmbH, the Hörzentrum research institutes in Oldenburg and Hannover, two Fraunhofer institutes and the Harse-Wissenschaftsakademie (HWK) are also part of the project.

The Collaborative Research Centre “Rosebacter“ will receive 9.5 million euros from the German Research Foundation (DFG) for its final funding phase ending in 2021. A team of scientists from Oldenburg, Braunschweig, Göttingen and Rouen led by marine biologist Prof. Dr. Meinhard Simon of the Institute for Chemistry and Biology of the Marine Environment is conducting research on one of the most important groups of marine microorganisms – the roseobacter bacteria. The team is studying the evolutionary, genetic, physiological, and adaptive traits of the bacteria. The results from five expeditions to the Atlantic and Pacific have supplied information on the geographic distribution of the different groups of bacteria and the differences in their metabolism and ecology. On the basis of this data and using mathematical models the researchers want to analyse the role the bacteria play in the global carbon cycle and the impact climate change is having on microbe communities.

Stable electricity grids

How does the electricity grid have to change in the course of the energy transition? A group of computer scientists from the University of Oldenburg are investigating this question in a German Research Foundation (DFG) priority programme. Led by Prof. Dr. Sebastian Lehnhoff of the Energy Informatics division, the team is involved in three of the projects in the interdisciplinary programme, with each of these projects receiving approximately 350,000 euros in funding. Because more and more electricity comes from renewable sources, power generation is fluctuating more than ever before. The researchers are researching how to keep the grid stable despite these fluctuations. One of the solutions they are studying is local control that acts independently and therefore makes the system more robust. In addition, the Oldenburg researchers are analysing the role of large-scale power failures and developing strategies for bringing the grid back into operation in a coordinated manner after such failures.

The energy transition as a social process

What happens in a social perspective if a region undergoes fundamental change – if for example it commits itself to the energy transition to renewable energies? How do the involved parties negotiate with each other, and what do they learn in the process? These and other questions are the main focus of the new junior research group “Regional Energy Transition: The Social Processes of Negotiating, Norming and Learning in the Wind Energy Sector”, which is led by Oldenburg sociologist Prof. Dr. Jannika Mattes. The DFG is financing the project with more than 1.2 million euros over five years within the framework of the Emmy Noether Programme. The project’s inclusion in this prestigious programme has enabled Mattes to employ three co-researchers. The team is based at the University’s Institute of Social Sciences and is developing a theoretical concept that aims to advance understanding of the energy transition. In addition, the scientists are analysing six regions in Germany and investigate how their activities in the wind energy sector are evolving. The analysis places special emphasis on the interaction between the actors from different societal fields: science, economics, politics and civil society. On the basis of interviews with experts, the researchers want to study how these actors negotiate agreements with each other on decisive processes, how their understanding of their role develops in the process, and what learning processes this involves. The researchers will also take account of citizens affected by the transition – and indeed everyone whose behaviour affects the process of change. The scientists plan to present their findings to those who play a key role in designing the energy transition and thus make a valuable contribution to its realisation. The results could for example be used to ensure that political instruments are better adapted to the main actors and the specific characteristics of a region.
New Collaborative Research Centre for hearing acoustics

Background noise like clattering crockery or a ringing phone make it difficult for people with impaired hearing to follow a conversation – even if they possess modern hearing aids. A new Collaborative Research Centre (CRC) at the University of Oldenburg has the mission to create the basis for improved hearing aids and assistive listening systems over the next four years. The German Research Foundation (DFG) will provide just under nine million euros in funding for the CRC titled “Hearing Acoustics: Perceptual Principles, Algorithms and Applications (HAPPA)” and led by psychoacoustics expert Prof. Dr. Volker Hohmann. At the centre of the CRC’s activities is the interaction between people with impaired hearing and their acoustic environment. Up to now hearing acoustics had not taken into account that people react to voices and sounds by turning their heads – with the result that many hearing aids don’t work as well in real-life situations as they do in the laboratory. Hohmann and his colleagues plan to develop an intelligent earpiece that offers high sound quality and at the same time reduces noise interference. In the long term the CRC’s findings are also to be used for other applications, for example in entertainment electronics, for speech recognition or for man-machine communication.

Digitalisation and legal issues

How the legal system reacts to the advancement of digitalisation is the main focus of the University’s new “Interdisciplinary Centre for the Rights of the Information Society (ZRI)” led by human rights expert Prof. Dr. Helmut Hillebrand of the Senckenberg Institutes in Göttingen, Halle, Jena and Leipzig and legal issues. A total of 9.7 million euros has been earmarked for the project. Freist and other researchers first began examining the documents held at the National Archives in 2012. Until that point the papers had gone largely unnoticed. The incorporation of the project into the Academies’ Programme means that they can now be subject to systematic analysis. The Prize Papers date back to the period of naval wars between 1664 and 1872 during which England, the Netherlands and other nations were locked in a battle for dominance of Europe and the world. During these wars, privates captured more than 30,000 vessels and, in accordance with the laws of that time, confiscated not only the cargo, but also all the papers they found on board these ships because they had to be able to prove in court that the ship in question and its cargo belonged to the enemy. For the researchers this was a fortuitous occurrence because this unsorted collection of papers puts them in the unusual position of being able to explore an “unarchived archive”. It contains sources that under normal circumstances would never have been preserved for posterity. Documents written by women, children or people who were barely able to write; scraps of paper with brief but important notes that would normally never have been kept because they would have seemed so trivial and irrelevant, and also letters, records and documents on highly important and biographic topics such as slavery. The scientists hope that the Prize Papers will provide new insights into the history of the Europeans and their responsibility in a globalising world.

Islands of diversity

Food webs and biodiversity in landscapes that are subject to constant change are the focus of the new research group “DynaCom” led by biodiversity expert Prof. Dr. Helmut Hillebrand of the Institute for Chemistry and Biology of the Marine Environment. The German Research Foundation (DFG) has approved three million euros in funding for the project for an initial period of three years. In addition to the Oldenburg scientists, researchers from the Senckenberg Institutes in Wilhelmshaven and Frankfurt, the universities of Göttingen and Münster, the German Centre for Integrative Biodiversity Research Halle-Jena-Leipzig and the Administration of the Lower Saxony Wadden Sea National Park are also participating in the project. At the centre of the project is the ecological theory of island biogeography, which analyses the interplay between immigration and extinction for all the species on an island using mathematical models. How the legal system reacts to the advancement of digitalisation is the main focus of the University’s new “Interdisciplinary Centre for the Rights of the Information Society (ZRI)” led by human rights expert Prof. Dr. Helmut Hillebrand of the Senckenberg Institutes in Göttingen, Halle, Jena and Leipzig

Understanding populist culture

What role is music playing in the rise of populist ideologies in Europe? An international team of researchers led by Oldenburg University music educator and computer scientist specialised in entertainment electronics, for speech recognition or for man-machine communication.

The world in mailbags

A treasure trove of historical papers held by the National Archives in London was left virtually untouched over several centuries. The “Prize Papers” – a collection of more than 4,000 boxes of letters, ship cargo lists and other documents dating back to the Early Modern Period. Over the next 20 years an international team of researchers led by Oldenburg historian Prof. Dr. Dagmar Freist will view, catalogue and digitise this unique archive and make it accessible to the public. In autumn 2017 the project “Prize Papers. Analysis – Digitisation – Presentation” (“Prize Papers. Erschließung – Digitalisierung – Präsentation”) was incorporated into the Academies’ Programme under the sponsorship of the Göttingen Academy of Sciences and Humanities. The Academies’ Programme is jointly funded by German federal and state government, and over time forgotten. For the researchers this was a fortuitous occurrence because this unsorted collection of papers puts them in the unusual position of being able to explore an “unarchived archive”. It contains sources that under normal circumstances would never have been preserved for posterity. Documents written by women, children or people who were barely able to write; scraps of paper with brief but important notes that would normally never have been kept because they would have seemed so trivial and irrelevant, and also letters, records and documents on highly important and biographic topics such as slavery. The scientists hope that the Prize Papers will provide new insights into the history of the Europeans and their responsibility in a globalising world.