

Press Release

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HIGHLY PRESTIGIOUS AWARD FOR LEADING INFECTION RESEARCHER

HUMBOLDT PROFESSOR EMMANUELLE CHARPENTIER BRINGS NEW FOCUS TO HZI AND MHH

Prof. Emmanuelle Charpentier is one of this year's recipients of the 5 million Euro Humboldt Professorship, one of Germany's most highly coveted research awards. The French microbiologist conducts research at the Helmholtz Centre for Infection Research (HZI) and teaches at the Hannover Medical School (MHH). Her research focus, regulation in infection biology, will help strengthen Braunschweig-Hannover as an internationally competitive research site.



Dirk Heinz, Scientific Director of the HZI (left), and Christopher Baum, MHH-President (right), with the new Humboldt-Professor Emmanuelle Charpentier. © MHH/Kaiser

How do bacteria pass on antibiotic resistances? How do they regulate their defence against the human immune system and adapt to changing environmental conditions? Charpentier's research topics have a common denominator: She studies regulatory mechanisms that play a role in infectious processes. Since December 2012, the scientist heads a research unit at the HZI, which is part of Germany's largest scientific organization, the Helmholtz Association of German Research Centres. Concurrently, she is a professor at the MHH, one of the country's largest research-oriented medical schools.

Throughout her professional career, Charpentier has conducted research in France, the US, Austria, and Sweden at renowned institutes like the Institut Pasteur and the Rockefeller University. Colleagues in her field view her recent switch to Braunschweig-Hannover as a major win for the regional and national research landscape.

"Emmanuelle Charpentier's work has the potential to contribute fundamental new insights to key processes during infections," explains Prof. Dirk Heinz, the HZI's Scientific Director. "The Humboldt Professorship is one of the highest honours bestowed upon researchers in Germany. We are very proud that the Alexander von Humboldt Foundation is recognizing Prof. Charpentier's scientific achievements with this award." Charpentier is one of four top researchers to receive the highly coveted award.

"It's very important to us to introduce insights gleaned in basic science research into the clinical setting," says MHH President Prof. Christopher Baum. "Emmanuelle Charpentier's excellent research is perfectly suited for such translational projects. The new Humboldt Professorship emphasizes the intense collaboration between the MHH and the HZI in the area of infection research." The Twincore, a centre founded by the MHH and the HZI, offers a perfect platform to join researchers and clinicians for common projects.

Charpentier's studies focus especially on regulatory mechanisms in cells of a certain group of microorganisms called gram-positive bacteria. The group includes streptococci and staphylococci, both of which are capable of eliciting serious acute and chronic infections. Charpentier's research has helped improve our understanding of how bacteria evolve antibiotic resistance rendering

conventional drugs largely ineffective. She has also uncovered key bacterial molecular control loops - knowing about these allows scientists to interfere with the bacterial life cycle.

Charpentier is particularly interested in determining how ribonucleic acid (RNA) and proteins, two important basic cellular building blocks, work and how they interact to regulate gene activity. She has co-discovered a rudimentary bacterial "immune system," which helps these microorganisms defend themselves against viruses. Her goal is to improve the current understanding of the interplay between these biomolecules during an infection and thus set the stage for the development of personalized therapeutic approaches.

The Alexander von Humboldt Professorship, endowed with up to 5 million Euros, is one of Germany's most highly remunerated international research awards. Bestowed by the Alexander von Humboldt Foundation, the professorship is supported by the Federal Ministry of Education and Research and serves the goal of making Germany more attractive to leading researchers and internationally competitive as a scientific research hub. The aim is to allow outstanding researchers to conduct long-term research at German universities and research institutes. Up to ten awards are given each year. The award ceremony will take place in Berlin in 2014.

Das Helmholtz-Zentrum für Infektionsforschung:

Am Helmholtz-Zentrum für Infektionsforschung (HZI) untersuchen Wissenschaftler die Mechanismen von Infektionen und ihrer Abwehr. Was Bakterien oder Viren zu Krankheitserregern macht: Das zu verstehen soll den Schlüssel zur Entwicklung neuer Medikamente und Impfstoffe liefern.

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