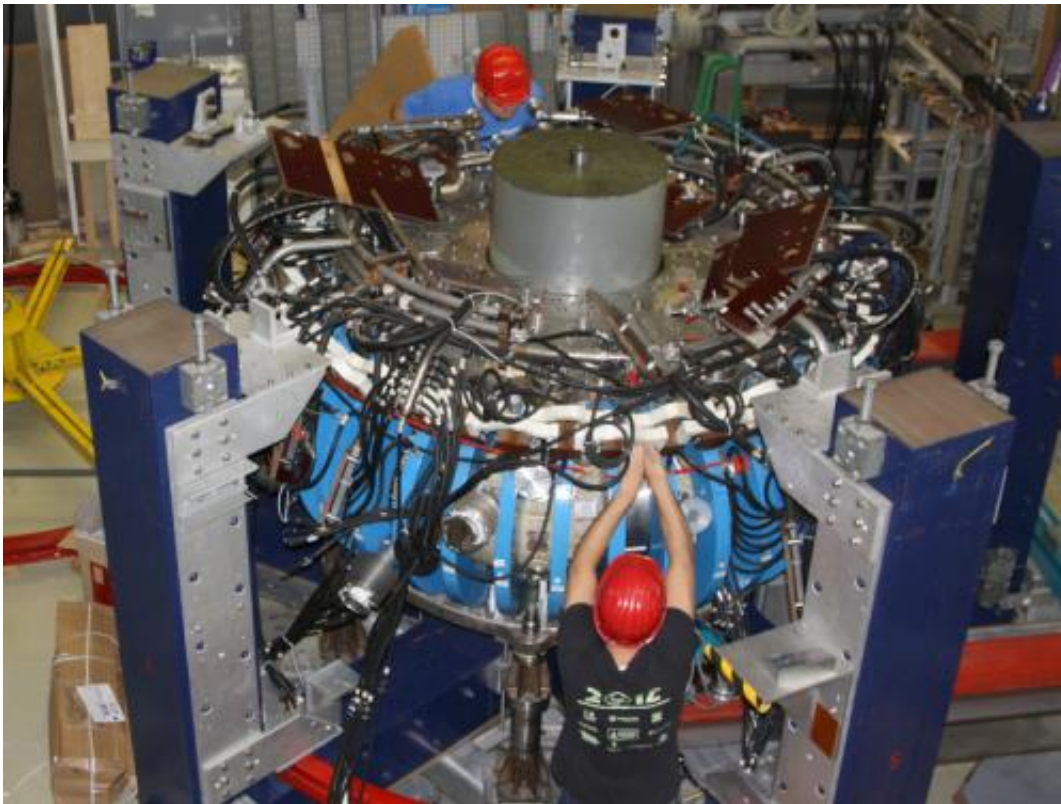


# WEGA fusion experiment passed on to the USA

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The first cables were disconnected in June: For 12 years young scientists were trained on WEGA, the Wendelstein-Experiment in Greifswald für die Ausbildung (Wendelstein Experiment in Greifswald for Training). Meanwhile the small stellarator is all packed away in crates and is on its way to new objectives in the USA. Credit: IPP, Iris Wesselowski

The small WEGA fusion device at Max Planck Institute of Plasma

Physics (IPP) in Greifswald is being handed over to the University of Illinois in Urbana-Champaign. The "Wendelstein-Experiment in Greifswald für die Ausbildung" (Wendelstein Experiment in Greifswald for Training) is making room for the Wendelstein 7-X large-scale device. Urbana is succeeding Greifswald, Stuttgart and Grenoble as fourth site for the sturdy device.

WEGA has been in operation at IPP Greifswald since 2001. The small, but versatile [fusion device](#) was used for training students and young scientific personnel to bridge the time till completion of the Wendelstein 7-X large-scale device. At the end of 2013 its time was up and WEGA had to be shut down; its place was needed for setting up the technical equipment for Wendelstein 7-X.

"This was a good opportunity for the University of Illinois", states the division head responsible at IPP, Professor Dr. Robert Wolf. "It was just at this time that the Center for Plasma Material Interactions (CPMI) were looking for a small [plasma](#) device." The transfer agreement was signed by IPP in mid-September 2014. Illinois are taking the responsibility and meeting the cost of dismantling WEGA, transporting it to the USA and re-assembling it at CPMI. Under its new name, HIDRA (Hybrid Illinois Device for Research and Applications), the device will continue to be used for plasma physics and fusion research. "We were very fortunate", says CPMI Director Professor David Ruzic, who sees numerous application possibilities for the device, including in particular investigation of the interaction between the plasma and wall material of the plasma vessel. The objective of fusion research is to develop a power plant that, like the sun, derives energy from fusion of atomic nuclei.

Transfer of WEGA is one of several constituents of American-German collaboration around Wendelstein 7-X. In 2011 the USA had already set up a three-year cooperation project with IPP whereby scientists from the

fusion institutes at Princeton, Oak Ridge and Los Alamos contributed with equipment and studies valued at about ten million dollars for building Wendelstein 7-X. In return, the United States will become partner in the research programme of the German device, a collaboration for which a new 500,000 dollar programme was set up for US universities.

Little WEGA is likewise a member of the Wendelstein family at IPP. It can look back upon an eventful past: Under the name "Wendelstein Experiment in Grenoble for the Application of Radio Frequency Heating" it was commissioned in 1975 as a joint German-French-Belgian project. Scientists from IPP at Garching and Centre d'Études Nucléaires at Grenoble had jointly planned, built and operated WEGA. After a seventeen-year stopover at the University of Stuttgart the device started up again at IPP Greifswald in 2001.

WEGA provided much of the new personnel of the branch institute, established in 1994, with their first experience of a plasma experiment. New heating antennas, diagnostics and control equipment for big-brother Wendelstein 7-X were tested on the adaptable WEGA device. It was the subject of two bachelor, two master, 13 diploma and six PhD theses. "At the age of almost 40 years, WEGA is certainly one of the longest-living fusion experiments, if not the longest ever", says Professor Wolf, who together with the WEGA team is happy that the sturdy device still has a future. "In presumably three weeks it will start out on its hitherto longest journey – this time even across the Atlantic."

Provided by Max-Planck-Institut für Plasmaphysik (IPP)

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