



UNIVERSITÄT  
HEIDELBERG  
ZUKUNFT  
SEIT 1386



AMERICAN  
COUNCIL ON  
GERMANY

**Heidelberg University Association** and the **American Council on Germany**  
cordially invite you to the

**HEIDELBERG LECTURE**

With

**Nobel Laureate Prof. Dr. Wolfgang Ketterle**

**NEW FORMS OF MATTER WITH ULTRACOLD ATOMS:  
SUPERFLUIDS AND SUPERSOLIDS**

**Tuesday, November 13, 2018, 5:30 p.m.**

Hosted by the UNC Center for European Studies  
Nelson Mandela Auditorium  
University of North Carolina at Chapel Hill – Fedex Global Education Center  
301 Pittsboro Street  
Chapel Hill, NC 27516  
*free parking under the building after 5pm*

**RSVP** by November 6 by clicking [here](#).

**Registration is required.** Seating is limited. Reception to follow.

Why do physicists freeze matter to extremely low temperatures? Why is it worthwhile to cool to temperatures which are a billion times lower than that of interstellar space? In his talk, Prof. Ketterle will discuss new forms of matter, which only exist at extremely low temperatures. Of special interest are superfluids which can flow without dissipation. Recently, he and his team have observed a supersolid which is gaseous, liquid and solid at the same time.

---

Heidelberg Lectures is a project within the Year of German-American Friendship 2018/2019. Also known as Deutschlandjahr USA, this comprehensive and collaborative initiative is funded by the German Federal Foreign Office, implemented by the Goethe-Institut, and supported by the Federation of German Industries (BDI).



Germany  
and the U.S.

**Wolfgang Ketterle** has been the John D. MacArthur professor of physics at MIT since 1998. He leads a research group exploring new forms of matter of ultracold atoms, in particular novel aspects of superfluidity, coherence, and correlations in many-body systems. His observation of Bose-Einstein condensation in a gas in 1995 and the first realization of an atom laser in 1997 were recognized with the Nobel Prize in Physics in 2001 (together with E.A. Cornell and C.E. Wieman). He began his studies at Heidelberg University, received a diploma (equivalent to master's degree) from the Technical University of Munich (1982) and the Ph.D. in physics from the University of Munich (1986). He did postdoctoral work at the Max-Planck Institute for Quantum Optics in Garching and at the University of Heidelberg in molecular spectroscopy and combustion diagnostics. In 1990, he came to MIT as a postdoc and joined the physics faculty in 1993. Since 2006, he is the director of the Center of Ultracold Atoms, an NSF funded research center, and Associate Director of the Research Laboratory of Electronics. His major accomplishments are the development of important tools to manipulate and study Bose-Einstein condensates, and several seminal studies of the properties of Bose-Einstein condensates and quantum degenerate Fermi gases.



Wolfgang Ketterle is a fellow of the American Physical Society, the Optical Society of America, the American Academy of Arts and Sciences, the Institute of Physics, a member of the German physical society, the European Academy of Sciences and Arts, the Academy of Sciences in Heidelberg, the European Academy of Arts, Sciences, and Humanities, the German Academy of Natural Scientists Leopoldina, a foreign associate of the National Academy of Sciences, an honorary member of the Deutsche Hochschulverband and a foreign member of the Russian Academy of Sciences. His awards include the Rabi Prize of the American Physical Society, the Gustav-Hertz Prize of the German physical society, the Dannie-Heineman Prize of the Academy of Sciences, Göttingen, Germany, the Benjamin Franklin Medal in Physics, the Nobel Prize in Physics, the Medal of Merit of the State of Baden-Württemberg, the Knight Commander's Cross (Badge and Star) of the Order of Merit of the Federal Republic of Germany, the MIT Killian Award and a Humboldt research award. He holds several Honorary Degrees and an Honorary Professorship.

\*

### **Heidelberg University Association – Universität Heidelberg's U.S. presence**

Founded in 1386, Heidelberg University is a strong research university with an emphasis on its international orientation and interdisciplinary focus. Germany's oldest university is also consistently ranked as one of Germany's best. Heidelberg University Association, a 501(c)3 non-profit organization based in New York, was founded in 2008 to support the University's dynamic transatlantic endeavors. [www.heidelberguniversity.org](http://www.heidelberguniversity.org)

### **American Council on Germany**

The American Council on Germany (ACG) is an independent, nonpartisan nonprofit organization that was founded in 1952 to strengthen German-American relations. Today, the ACG works across generations to provide a deeper, more nuanced understanding about Germany, Europe, and the importance of the transatlantic partnership. [www.acgusa.org](http://www.acgusa.org)

### **The Center for European Studies (CES) at the University of North Carolina at Chapel Hill**

The CES advances understanding of the social, political, and economic events that shape contemporary Europe. Established in 1993, CES is one of only four in the nation to be designated as both a National Resource Center by the US Department of Education and a Jean Monnet Center of Excellence by the European Union. CES is consistently recognized among the top centers for European studies in the country for its innovative programming.

<https://europe.unc.edu/>

