

UMR's Newest Physics Faculty Member Carsten Ullrich

The UMR Physics Department was pleased this past August to welcome **Dr. Carsten Ullrich** into its faculty ranks. Carsten is a native of Würzburg, a beautiful old German city, located on the river Main in the northeastern corner of Bavaria. According to Carsten, however, the inhabitants of the region vehemently reject being labeled "Bavarians." Instead, they identify themselves as "Franconians," a distinction that is perhaps best seen in their preference for the local, extremely dry, white wines over the beers of Bavaria. The University of Würzburg, where Carsten majored in physics, was founded over 500 years ago, and is perhaps best known as the place where x-rays were discovered in 1895 by **W.C. Roentgen**, winner of the first Nobel Prize in physics. In 1989, Carsten spent a year in the US as an exchange student at the State University of New York at Albany. As a consequence, he completely missed all the exciting historical events in Germany during the fall of the iron curtain. But he also got his first impressions of academic life in the US, of the country, and its people, and overall had such a wonderful time that he looked forward to the chance to return.

Upon returning to Würzburg, Carsten started his thesis research in theoretical physics, working with Prof. **E.K.U.**



Carsten Ullrich

Gross on various issues in density-functional theory. His master's thesis in 1992 dealt with inhomogeneous superconducting systems, and for his Ph.D. in 1995 he worked on numerical simulations of dynamical processes of atoms in super-intense laser fields. In fall 1995, Carsten started his life as a postdoc. His first station was Toulouse, a beautiful city in southwest France, where he spent the year 1996 studying electron dynamics in strongly excited metal clusters—and the local cuisine. In 1997, he then went back to the US to work with Prof. **Giovanni Vignale** at the Physics department of UM Columbia, doing research on electron dynamics in semiconductor nanostructures. After spending two and a half years in Columbia, he began to feel very much at home in Missouri. Nevertheless, when the opportunity arose to go to California, he didn't think twice, but left for Santa Barbara in the fall of 1999. He spent two years at UCSB, at the Institute of Theoretical Physics and the Quantum Institute, working with 1998 Chemistry Nobel Laureate **Walter Kohn**, the founder of density-functional theory. Finally, we are happy to report, he returned to Missouri in the Summer of 2001, when he joined the UMR Physics faculty.

UMR Researchers Test Jet Engines - continued from page 4.

Researchers from MIT, the British government, and Aerodyne Research Corporation also participated in the test. The British government and Aerodyne researchers studied different types of gas used in the engine. "MIT researchers are specialists in modeling combustion," Hagen says. Their research shows how emissions pass through the engine.

In addition to Hagen, UMR CASL researchers **Philip Whitefield**, associate professor of chemistry; **Max Alcorn**, research maintenance technician; and **Max Trueblood**, senior research aid, traveled to England to participate in the testing of the jet engine. UMR students participating in the test included **Andy Rutter**, a graduate student in chemistry from Wiltshire, England; **Ben Eimer** (BS '00), a graduate student in physics from Hillsboro, Mo.; **Michael Cress**, a junior in computer engineering from Rolla, Mo.; **Grant Folkmann**, a senior in chemistry from Washington, Mo.; **Derek Dressler**, a senior in chemistry from Lenzburg, Ill.; **Jeromy Jones**, a senior in chemistry from Kansas City, Mo.; and **Gregory Sitton**, from Rolla, Mo., a computer engineering student at the University of Missouri-Columbia who worked in UMR's CASL for the summer.

UMR Well-Represented at 2001 International Science and Engineering Fair

Steven Goldammer (BS '73, MS '76), who is Online Products Engineering Leader for Novellus Systems in San Jose, CA, sent us this report on the 2001 International Science and Engineering Fair:

"The 2001 International Science and Engineering Fair was held in San Jose, California, during the second week of May. UMR scholarships were awarded for Physics, Chemistry, Computer Science, Ceramics, Metallurgy, and Petroleum Engineering. I was pleased and honored to represent the UMR Physics department as a special awards judge. Also representing UMR were local alumni **Joey Tuttle** (Phys '64), **Dr. Donald Packwood** (Phys '63), and **Michael Johnson** (MetE '62). The UMR team was led by Lori Gilmore from the School of Mines and Metallurgy and **Dr. Daopu Numbere**, Professor of Petroleum Engineering. All of the judges were impressed by the depth and quality of the exhibits and by the students' composure throughout a long day of interviews. Special activities included a panel discussion with eight Nobel laureates and a judges' reception at the San Jose Museum of Art. The experience was rewarding for all involved."