

## UMR's Thomas Vojta Co-Chairs International Workshop on Quantum Phase Transitions

Phase transitions like the melting and freezing of water are usually associated with changes in temperature. However, in the last few years a different kind of phase transitions has become a central topic in solid state and statistical physics. These new transitions, which are dominated by quantum mechanics and thus called quantum phase transitions, occur at extremely low temperatures when a parameter like pressure, magnetic field or chemical composition is changed. They are thought to be of crucial importance for the understanding of phenomena like high-temperature superconductivity or the quantum Hall effect.



UMR Physics faculty member Thomas Vojta, together with Dietrich Belitz of the University of Oregon and Ted Kirkpatrick of the University of Maryland, coordinated an international workshop on quantum phase transitions this past summer. The five-week long workshop brought together 88 researchers from 17 countries and 3 continents. It was generously supported by the German Max-Planck Society and hosted at the Max-Planck Institute for Physics of Complex Systems in Dresden, the capital of the German state of Saxony. The program of the workshop was built around a conference in the middle week and a series of informal talks. Participants had ample time for

spontaneous discussions, which were widely used for exchanging ideas and starting new research projects.

In addition to the scientific program, the participants were treated to a Dresden tour featuring the city's famous baroque and renaissance architecture, and they could relax enjoying the mountains and rocks of Saxon Switzerland.



## Jeff Schroeder to Speak at Homecoming 2004

Jeff Schroeder will be the the guest speaker for the 2004 Physics department Homecoming Colloquium (see article, page 15). After graduating from UMR in 1995 with degrees in physics and mathematics, Jeff spent four years in the aerospace industry working on orbital mechanics software and analysis. The three-dimensional satellite visualization programs he wrote and maintained were used by several commercial and government programs. In addition to his full-time work, Jeff served as a college recruiter and was often seen at UMR career fairs or giving presentations to students around the country.

In 1999 Jeff left the corporate world to join a small consulting firm, where he did work in document management and database technology. Despite the small size of the company, he was able to do work for Hewlett-Packard, Intel, and several major airlines. He gained valuable experience in web development and decided to apply it on his own.

With the dot-com boom in full swing, Jeff formed his own consulting company. He did on-site contract work for several local companies, and was later able to move into his own office and work as a consultant. His specialty— database-driven web applications— has helped many companies expand their online presence and improve their business processes.

Three years later, Jeff continues working as a consultant and is looking for ways to expand his business. He loves the flexibility and opportunity to work with a variety of people and companies. Although he doesn't use his physics education in his daily work, he enjoys the challenges of web development and keeps abreast of the latest physics news.

## Congratulations to 2003 Physics Dean's List Recipients

### Winter Semester 2003

Armin Ahlheim, Joshua Carey, Joseph Eimer, Sarah Eyeremann, Paul Gholson, Timothy Ivancic, Ryan Kinney, Matthew Krems, Christopher Lloyd, Ryan Mallery, Matthew Richard, Charles Williams, Samuel Woods, Travis Yates.

### Fall Semester 2003

Armin Ahlheim, Joshua Carey, Kevin Day, Mark Dickison, Sarah Eyeremann, Ryan Kinney, Kurt Koch, Matthew Krems, Christopher Schwartze, Zachary Stegen, Andrew Walters, Clayton Weidinger, Charles Williams, Samuel Woods.