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.

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

Fall Semester 2003