

High-Productivity Software Development Tools

Presented by

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Virtual Institute-High Productivity Supercomputing - Partners



Forschungszentrum Jülich

- Jülich Supercomputing Centre



RWTH Aachen University

- Center for Computing and Communication



Technical University of Dresden

- Center for Information Services and High Performance Computing



University of Tennessee

- Innovative Computing Laboratory



VI-HPS Associated Partners



German Research School

- Laboratory of Parallel Programming



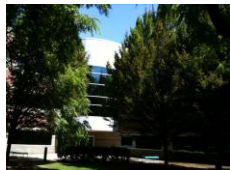
Technical University of München

- Chair for Computer Architecture



University of Stuttgart

- High Performance Computing Centre



University of Oregon

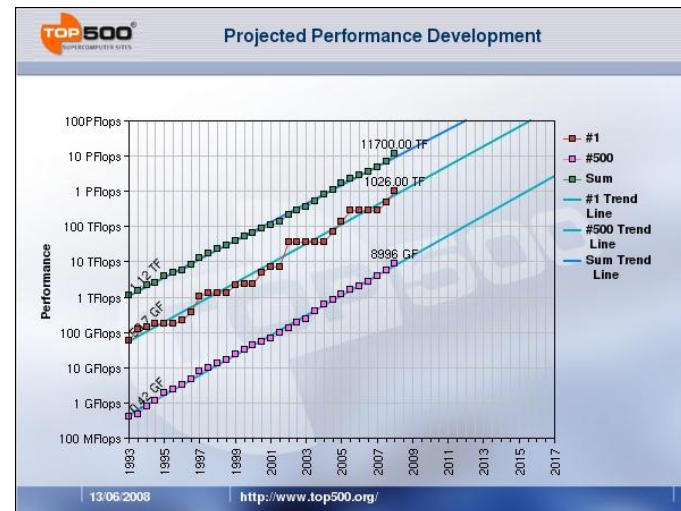
- Performance Research Laboratory



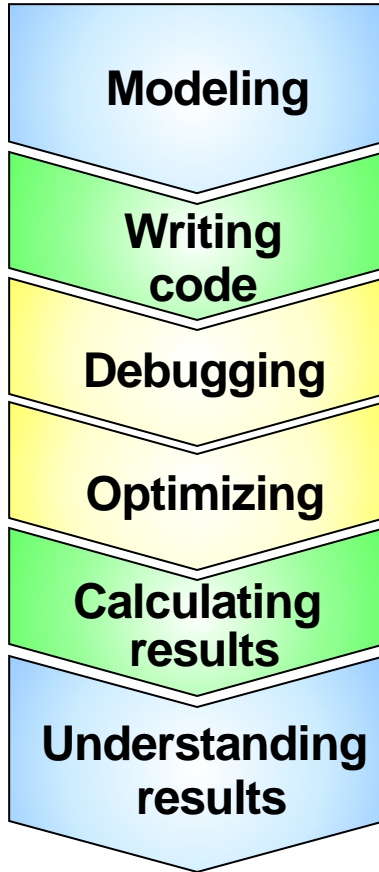
Productivity of supercomputing

Today's supercomputers offer unprecedented levels of hardware performance, but using them in a productive manner remains a major challenge

- **Writing correct and efficient code requires**
 - A domain scientist
 - A (super)computer expert
- **Access to parallelism offered via low-level interfaces**
 - Hard to learn and use
 - Performance behavior hard to understand and predict

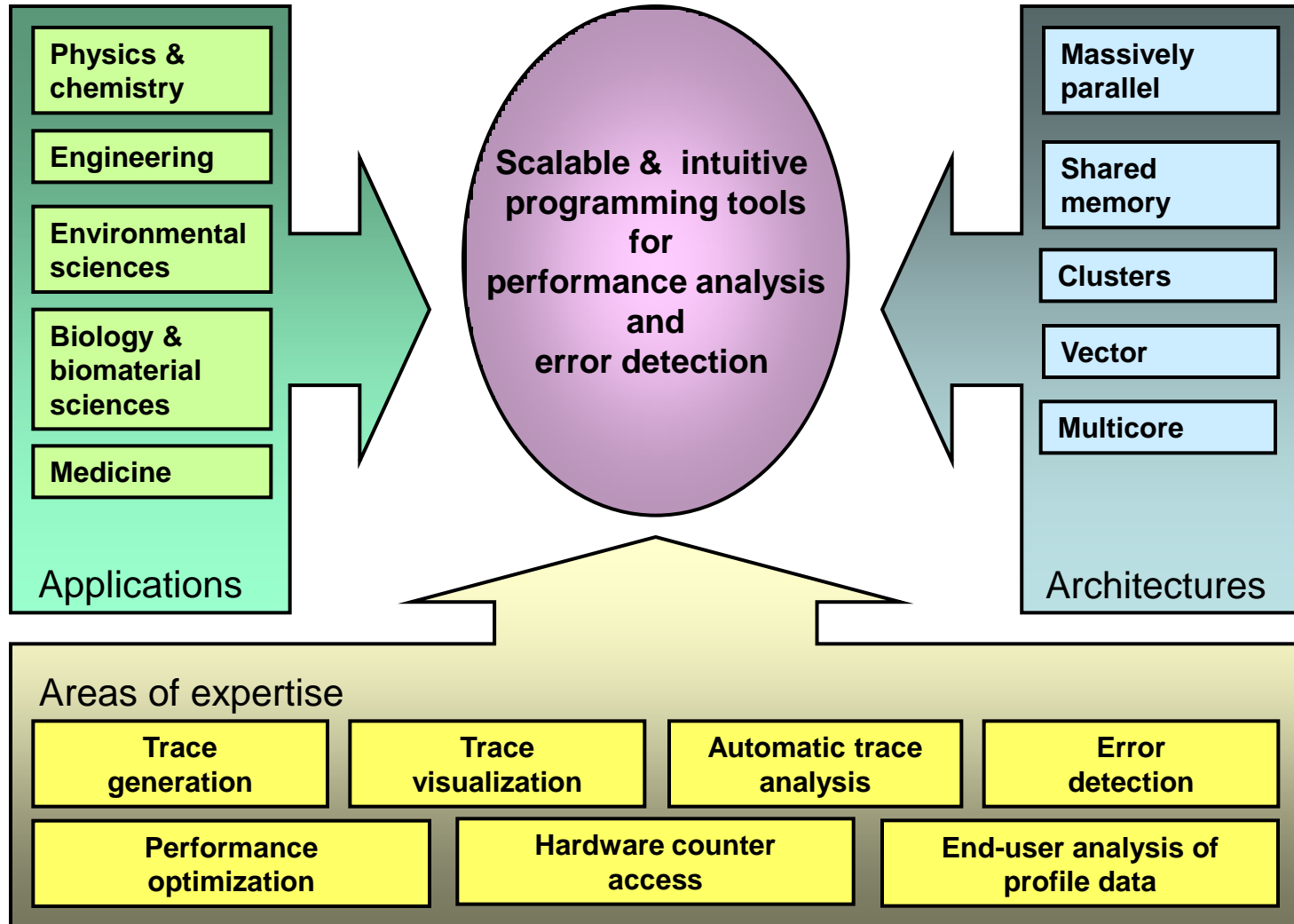


Objectives

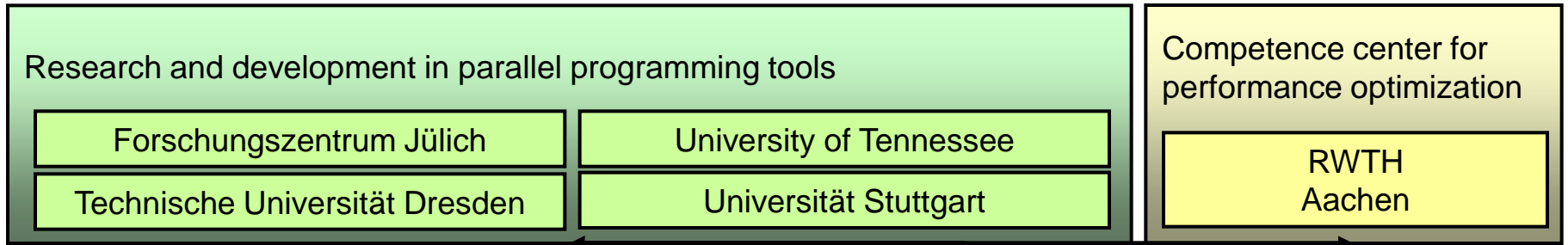
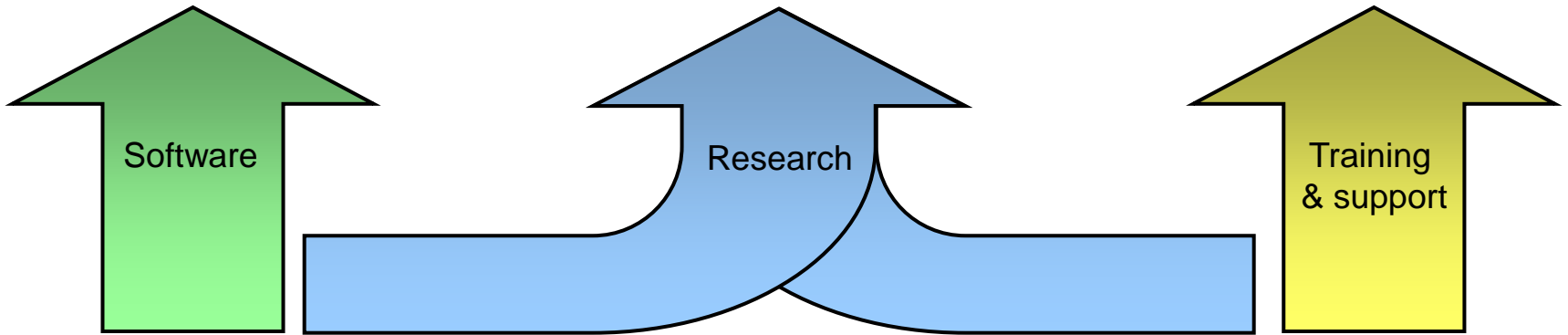


- Develop advanced programming tools for complex simulation codes to
 - Improve the quality
 - Remove errors
 - Increase performance
 - Accelerate the development process
 - Make error detection and performance optimization not only better, but also faster
- Offer training and support

Synergy

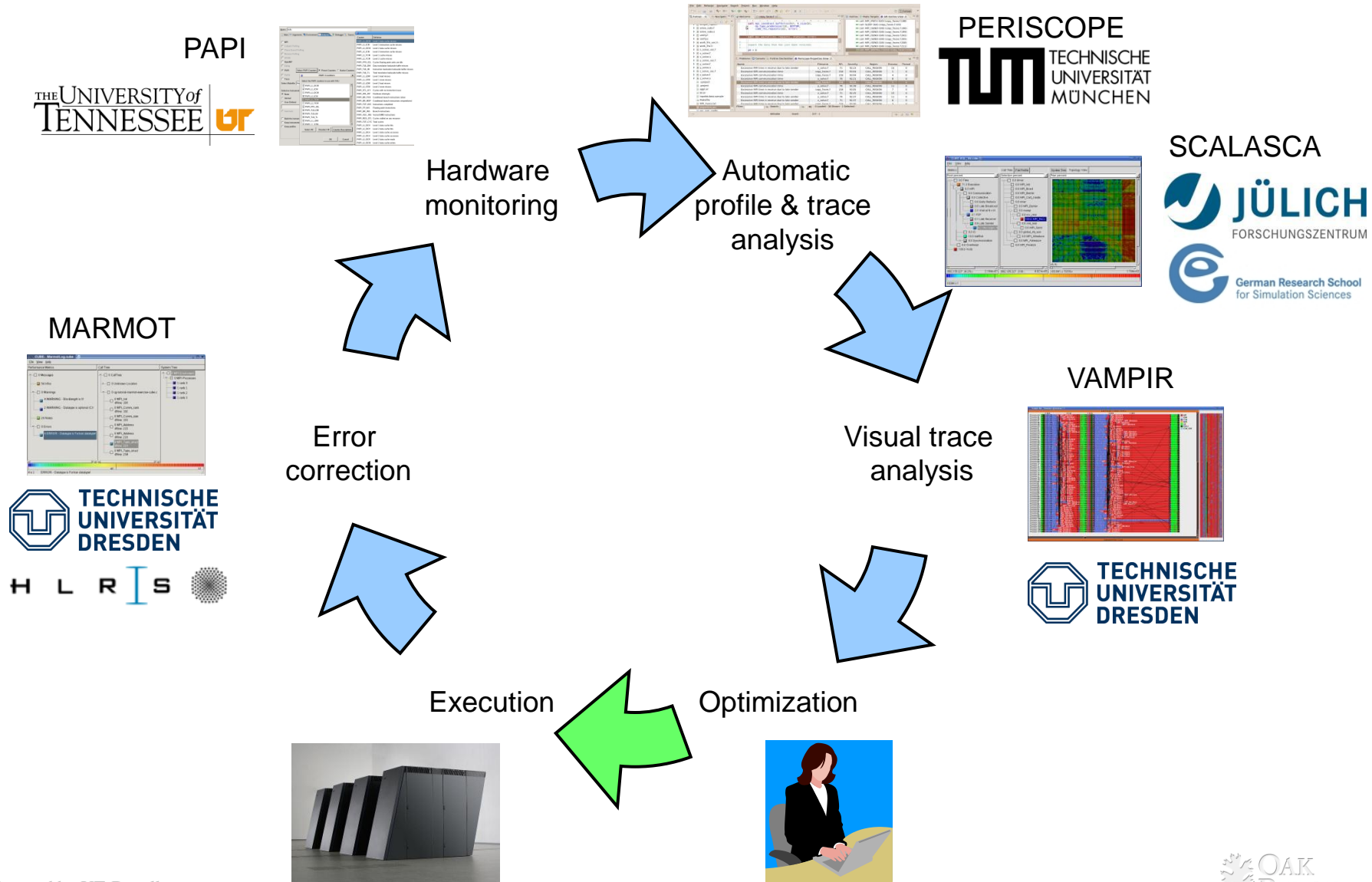


Collaboration



Feedback / testing

Technologies and their integration



VI-HPS Training & Tuning Workshops

- **Goals**
 - Give an overview of the programming tools suite
 - Explain the functionality of individual tools
 - Teach how to use the tools effectively
 - Offer hands-on experience and expert assistance using tools
 - Receive feedback from users to guide future development
- **For best results, bring & analyze/tune your own code(s)!**
- **VI-HPS Tuning Workshop series**
 - Aachen (Mar'08), Dresden (Oct'08), Jülich (Feb'09), Bremen (Sep'09), Garching (Mar'10), Amsterdam (May'10), Stuttgart (Mar'11), Aachen (Sep'11)
- **Joint POINT/VI-HPS Tutorial series**
 - Austin/SC (Nov'08), Baton Rouge/ICCS (May'09), Portland/SC (Nov'09), New Orleans/SC (Nov'10), Seattle/ SC (Nov'11)
- **Training with individual tools & platforms**

Contact

For more information

www.vi-hps.org

