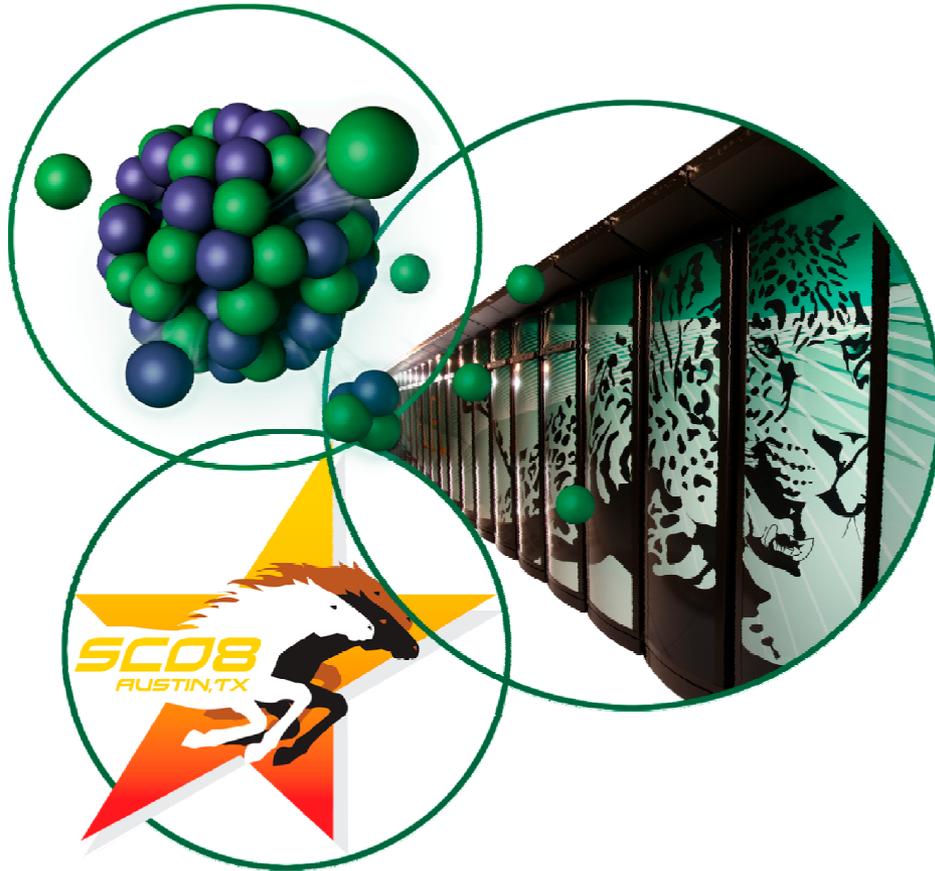


# High-Productivity Software Development Tools

**Jack Dongarra**

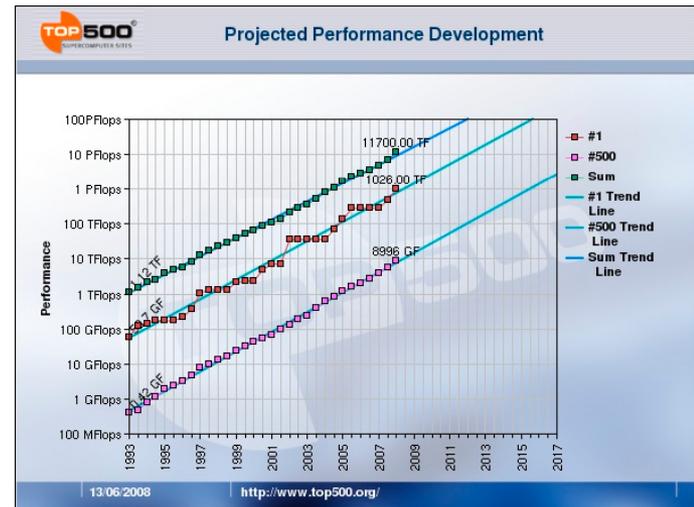
University of Tennessee and  
Oak Ridge National Laboratory



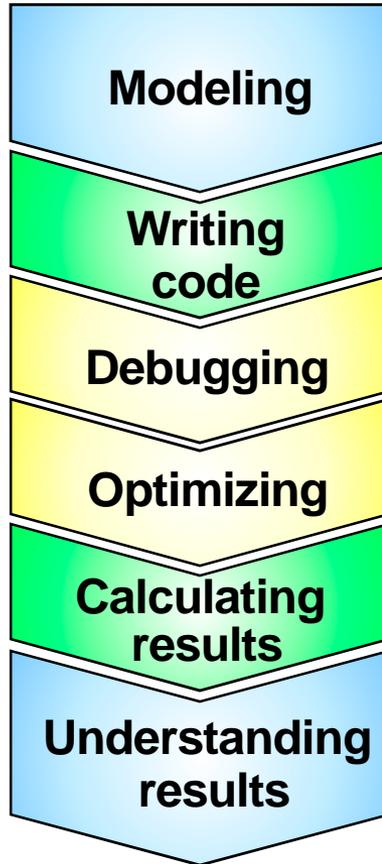
# Productivity of supercomputing

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**

# Partners



**Forschungszentrum Jülich**  
*Central Institute for  
Applied Mathematics*

## VI-HPS Steering Board

**Christian Bischof**  
(deputy spokesman)



**RWTH Aachen University**  
*Center for Computing and  
Communication*

**Christian Bischof**  
(deputy spokesman)



**Technische Universität Dresden**  
*Center for Information Services and  
High Performance Computing*

**Wolfgang Nagel**

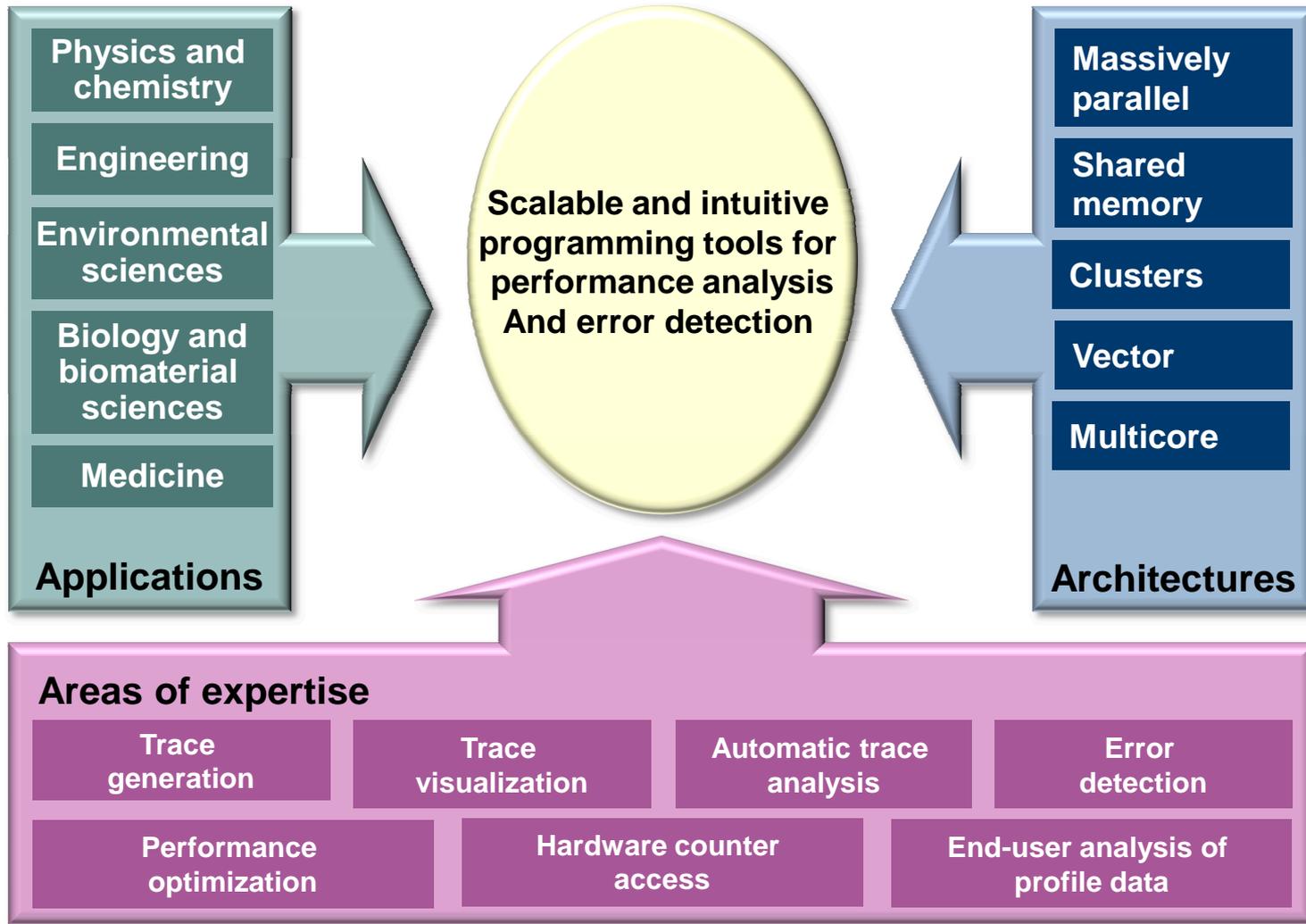


**University of Tennessee**  
*Innovative Computing Laboratory*

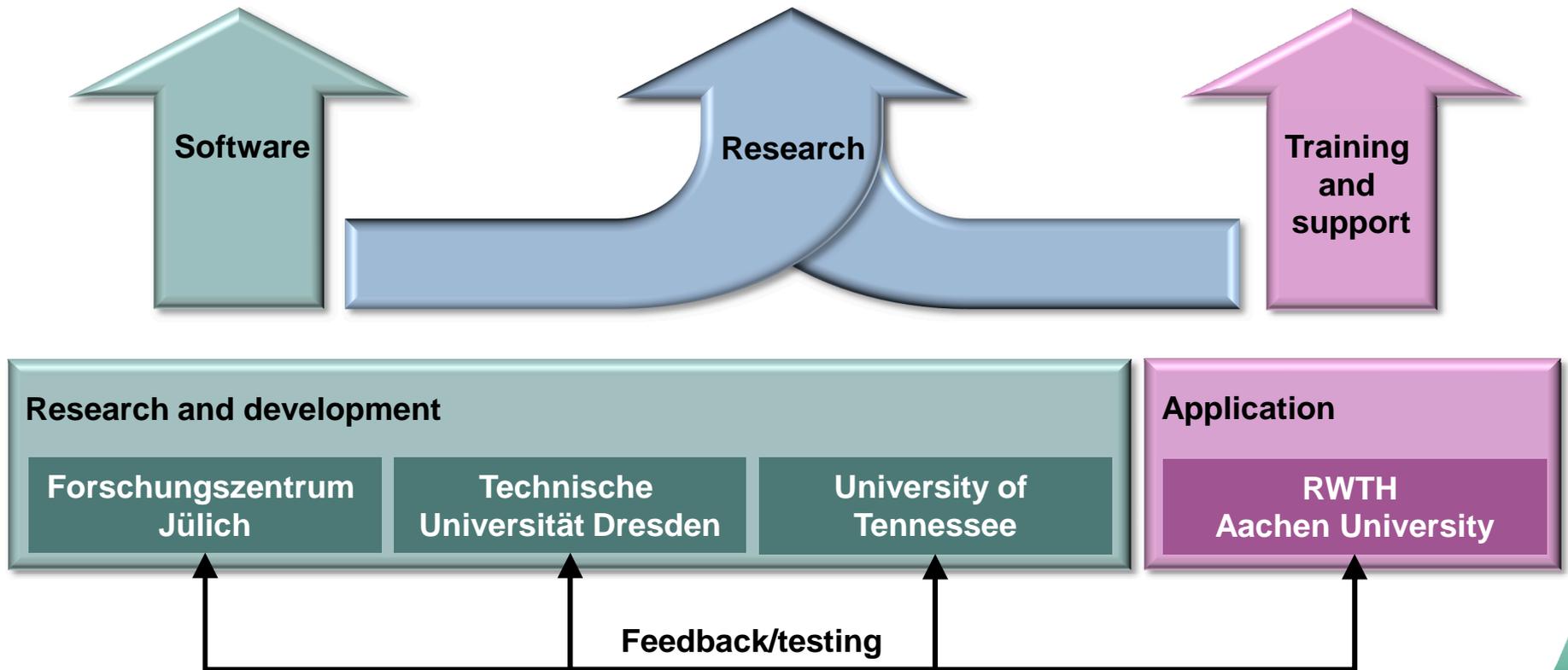
**Jack Dongarra**



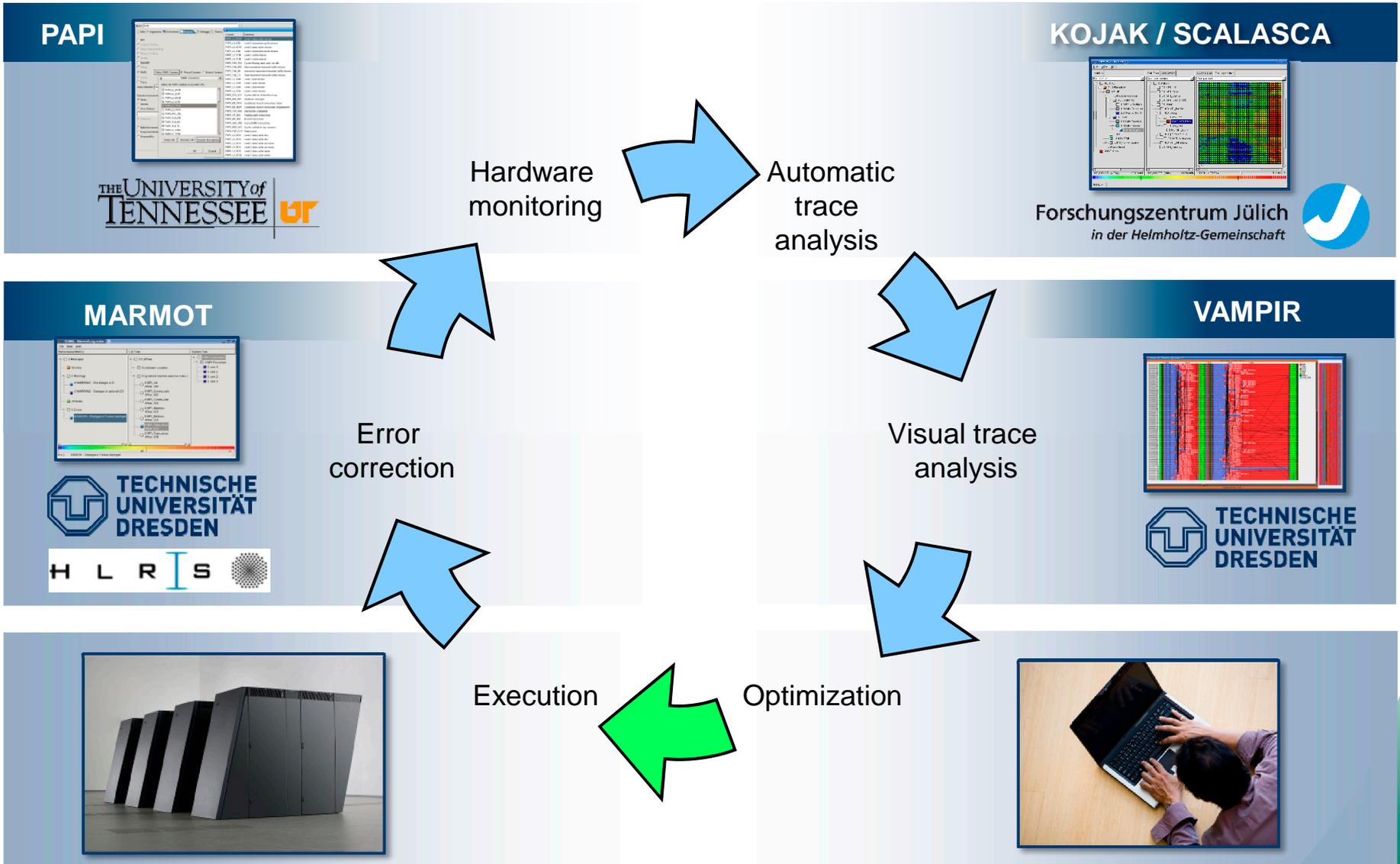
# Resources and competencies



# Work sharing



# Technologies and their integration



# Contact

**For more information**

[www.vi-hps.org](http://www.vi-hps.org)



8 INNOVATIVE COMPUTING  
LABORATORY

THE UNIVERSITY of TENNESSEE  
Department of Electrical Engineering and Computer Science

