“Addressing National Priorities through Interdisciplinary Programs: Opportunities for Graduate School Leadership”

Ernst Rank
TUM Graduate School
Technische Universität München

December 5, 2009
TUM Graduate School: Structure

Top-level research

Thematic Graduate Centers
with interdisciplinary missions, faculty-spanning

Faculty Graduate Centers
with subject-related missions
International Graduate School of Science and Engineering

*From invention to innovation*

**Typical interdisciplinary project team:**

- **TUM Chair Science**
  - 2+ Principal Investigators (professors)
  - Team Leader (postdoc/young researcher)
  - Ph.D. students: 2 funded by IGSSE, 2+ funded by others
  - Master’s students

- **TUM Chair Engineering**

---
Typical interdisciplinary project team:

- 2+ Principal Investigators (professors)
- Team Leader (postdoc/young researcher)
- Ph.D. students: 2 funded by IGSSE, 2+ funded by others
- Master’s students

International or industry-sponsored project team:

- Half the team @ TUM, half @ partner institution
- Regular and frequent communication & cooperation

Current international/industrial project teams:

- Stanford, DTU Copenhagen, NUS Singapore, Nanjing Univ., Tsinghua Univ., Fudan Univ.
- NASA, DLR
- Siemens, General Electric, BASF, EADS, Fujitsu, SOFiSTiK, Tyczka Energie, Süd-Chemie
One out of forty projects: Risk Evaluation for Abdominal Aortic Aneurysms Rupture

Gee, Eckstein, Reeps, Navab, Schwaiger, Wall, Baust, Demirci, Maier
TUM Graduate School: Research Training Program

- **Networking**
  - Exchange across faculties

- **Supervision agreement**
  - Incl. “double mentoring”, interim evaluation

- **Subject Related Training**
  - E.g. colloquia

- **International Training**
  - Research period abroad

- **Scientific Training**
  - Publications, interim evaluation

- **Transferable Skills Training**
  - Min. 3 courses, kick-off & final seminar
Kick-Off Seminar, 24-27 November 2009, Abbey Frauenwörth, Frauenchiemsee

Networking

Transferable Skills Trainings
- E.g. scientific paper writing, research methods, communication & presentation, project management, time management, philosophy of science, etc.

Workshops
with senior scientists on science, engineering and society