Research and the Graduate Schools

Dr. Dietrich Halm
Graduate Education in Germany (before 1990)

► traditionally: doctorate as “apprenticeship”, no institutionalisation
► no offers for expansion of scientific knowledge and methodological skills
► strong dependence on one supervisor, “Doktorvater”
► long time-to-degree, difficult transition into non-academic market

=> need for **structured PhD** programmes!
► 1990: DFG launched new funding instrument: **Research Training Groups**
► Since 1997: **International** Research Training Groups

**Characteristics:**
► **Graduate training embedded into high level research**, innovative research programme, structured qualification programme, transparent and structured supervision, interdisciplinarity, international cooperation
Why is the DFG intensifying its promotion of young researchers?

In order to help outstanding scientists and academics to:

► optimally develop their research careers
► gain scientific independence early
► ensure the future viability of science in Germany
What are the DFG’s objectives in funding top young talent?

To ensure that outstanding young researchers:

► from all scientific disciplines are supported
► from Germany are retained and that those from abroad are attracted
► have the freedom they require to perform excellent research
► are supported by first-class research environments
► are equipped with the necessary resources for their projects
Funding Instruments

Funding Programmes

Research Careers
- Research Grants
  - Temporary Positions for PIs
- Research fellowships
- Emmy Noether
- Heisenberg
- Reinhart Koselleck

International cooperation/contacts

Infrastructure

Individual Grants
- Research Grants
- Research fellowships
- Emmy Noether
- Heisenberg
- Reinhart Koselleck

Coordinated Programmes
- Research Units
- Priority Programmes
- Collaborative Research C.
- DFG Research Centres
- Excellence Clusters (ExIn)
- Graduate Schools (ExIn)
- Research Training Groups

Prizes
- Gottfried Wilhelm Leibniz Prize
- Heinz Maier-Leibnitz Prize
- Communicator Prize
- ...
What is the Excellence Initiative?

The Excellence Initiative
► was launched in 2005 by the German Federal Government and the 16 state governments
► has 2 phases (2006/7-2012 and 2012-2017)
► is conducted by the German Research Foundation (DFG) and the German Council of Science and Humanities (WR).
► is financed jointly by the German Federal Government (75%) and the 16 Federal States (25%), (fresh money, totally 4,6 bn Euro over 10 years)
  - 1st Phase: € 1.9 bn (€ 380 mn/year)
  - 2nd Phase: € 2.7 bn (€ 540 mn/year)
The program aims to:

- promote top-level university research and training
- create excellent conditions for young researchers
- motivate cooperation across disciplines and institutions
- enhance internationalisation
- promote equal opportunities for men and women at universities

The Excellence Initiative aims to improve the general standard of university research in Germany and the international competitiveness and visibility of German universities.
How does the Excellence Initiative work?
Three lines of funding

Institutional Strategies for Top-Level University Research
Increase international competitive ability of the entire university
- 11 Institutional Strategies
- approx. 12.5 million € p.a. each

Graduate Schools
*Highest level research training*
- 45 Graduate Schools
- Ø 1.6 million € p.a. each

Clusters of Excellence
*Centres of excellence in research*
- 43 Clusters
- Ø 6.3 million € p.a. each
Basic idea of the Excellence Initiative:

- Scale up the concept of Research Training Groups
- Improve doctoral training in a comprehensive manner
- Introduce Graduate Schools

- Same basic idea as RTG: top-level research, structured research training, quality recruitment and supervision

- **but**: larger projects (up to 2.5 million € /year), mostly implemented at higher organisational level of university

- Less restrictions on use of funds, more freedom to shape each Graduate School
Graduate schools are characterised by:

► original strategies for promoting young researchers
► an excellent research environment
► international networking
► cooperation with non-university institutions
► gender equality standards
► professional management

Proposals reviewed by international teams of independent researchers (80% from the outside! Whole process done in English language)
Graduate schools (GSC) play a key role not only in developing internationally competitive centres of top-level research and scientific excellence in Germany but also in increasing their recognition and prestige.

GSC serve as an instrument of quality assurance in promoting young researchers and are based on the principle of training outstanding doctoral students within an excellent research environment.

GSC offer ideal conditions for doctoral students within a broad scientific area and, as integrative institutions with international visibility.

GSC encourage (international) students to be active members of their academic and social communities.
Research Training Groups

- Focused, coherent research programme, designed by PIs
- 5-10 PIs
- ~ 15-30 doctoral researchers
- can be class/module of GSC
- \( N = 225 \)

Graduate Schools

- Cover research field(s) & priorities of the university
- 25 PIs + participating investigators
- ~ 40-300 doctoral researchers
- can incorporate RTGs
- \( N = 45 \)
generally few „hard data“ on doctoral stage in Germany
(enrolment is not mandatory, no enrolment – no data)

methodological challenges (*e.g. duration of doctorate – definition of „start“ and „end“*)

Until now: no comprehensive and up-to-date evaluation of RTGs

Monitoring of RTGs by annual surveys:

- Approx. 5.500 doctoral researchers funded in RTG
- Average “Time-to-degree” in RTGs is ~41 months - 3-5 months faster than in DFG Collaborative Research Centres
- Above–average “inbound mobility”/international recruitment: approx. 25 % of doctoral researchers and ~40% of Postdocs in RTGs have non-German nationality
- Opportunities for international mobility (conferences/research visits) exploited
Transformations of Civic Society. Japan and Germany in Comparative Perspective (IRTG 1456, Halle – Tokyo/Japan)

Brain-behavior relationship of emotion and social cognition in schizophrenia and autism (IRTG 1328, Aachen – Philadelphia/USA)

Dynamical Phenomena in Complex Networks: Fundamentals and Applications (IRTG 1740, HU Berlin – INPE, São Paulo/Brazil)

Virtual Materials and Structures and their Validation (IRTG 1627, Hannover – Cachan/France)
DFG Graduate Schools
Scientific diversity (1st phase)
Excellence Initiative: Impact

~ 6,200 new positions

EXC und GSC
~ 3,600 doctoral positions
~ 700 position for postdocs
~ 270 junior professorships
~ 390 senior professorships
~ 230 other academic staff

Institutional Strategies
~ 850 positions for early career researchers (doctoral level to group leader)
~ 145 junior & senior professorships

[2011]
Many universities develop and implement GSC-like structures, with support from state government or intramural funds.

Institutionalization and accountability of doctoral education: e.g. support for early career researchers is now defined as leadership responsibility and considered as safeguard measure in Good Scientific Practice.
Next stages

► June 2015: **Report** on the program by WR and DFG (data based report)

► January 2016: **Evaluation** of the program by international experts

► End of 2016: **Political decision** on the future of the program (discussion already started)
Thank you for your attention!

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The Excellence Initiative has already had a positive effect on the structure and profile of German universities.

The creation of research-friendly structures has given research output a noticeable boost.

The initiative has also played an instrumental role in a general positive development of the German higher education landscape.

Measures for gender equality and work-family balance, for interdisciplinary collaboration, for the promotion of young academics, and for increased internationalization are promoted actively by the Excellence Initiative.

In addition, the Excellence Initiative has also generated new jobs. An analysis by the Institute of Research Information and Quality Control (iFQ) reveals that over 6000 new researchers have been recruited so far at the universities and research institutions currently receiving funding.
Committees involved in the **Excellence Initiative**

- **DFG**
- **Strategy Commission**
- **Joint Commission**
- **Representatives of federal and state government**
- **Grants Committee Excellence Initiative**
- **WR**