Identifying the Best: The CHE Ranking of Excellent European Graduate Programmes in Natural Sciences

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Target Groups

- Undergraduates from European and non-European universities
- Higher Education Institutions (HEIs)
- Organisations and Society at large
CHE-Methodology

Based on the ranking principles of CHE:

- Discipline-oriented (not entire HEI)
- Multi-dimensional (not accumulated overall result)
- Rank groups (no league tables with individual ranks)

Adheres to „Berlin Principles on Ranking of Higher Education Institutions“

- not all European HEIs but examples of excellence
2 Step Process

First step: analysis of all European HEIs based on four indicators

Second step: in-depth analysis of excellent programmes
1. Indicator

- **Number of publications** in the web of sciences (1997-2004)
- Size indicator
2. Indicator

- **Citations** (normalised to the international standard)

- Only HEIs with an FCSm above 1.0 counted

- Reception indicator
Indicators Step 1

3. Indicator

- **Outstanding Researchers** (highly cited authors, Nobel Prize winners, Field medalists (researchers still teaching!))
- Lighthouse indicator
Indicators Step 1

4. Indicator

- Number of **projects in the Marie Curie programme**
  - Marie Curie Intra-European Fellowships (EIF)
  - Marie Curie Incoming International Fellowships (IIF)
  - Marie Curie Research Training Networks (RTN)
  - Marie Curie Host Fellowships for Early Stage Research Training (EST)
  - Marie Curie Excellence Grants (EXT)
  - Marie Curie Chairs (EXC)

- European dimension
Selection Step 2

All HEIs with at least one bronze medal are performing very well compared to the rest of Europe.

HEIs with gold or silver medals in at least 3 out of 4 indicators were selected for in-depth analysis.
In-depth Analysis

- **Student judgements**
  - overall situation, aspects of training and courses, counselling and advise, computer equipment, labs, library
  - doctoral students in addition, immersion in scientific community (conferences, workshops, etc.) and opportunity for publication

- Percentage of **international and female staff**

- Percentage of **female and international students**
Very important:
Considerable amount of supplemental information (on departments, work conditions, stipends etc.)

Central feature of online version:
access to more than 1,000 research groups assigned to different research categories
Findings
Findings: entire sample 1

- Between 117 (physics) and 129 (mathematics) HEIs with at least one top group (silver or gold) placement in one of the four indicators.

- Distribution is rather comparable between the subjects; in general only around 5% of the overall group qualify in all four indicators.

- Decrease in numbers per additional indicator: app. 45-50%.

Gold or silver medals:
- four
- three
- two
Findings: entire sample 2

Countries:

- 46% of all HEIs in Germany and UK (size factor)
- Some small countries (such as Netherlands, Switzerland, Sweden) are producing excellence exceeding their population share
Findings: entire sample 4

Top group placements throughout Europe

Black = 1 or 2 top groups
Red = 3 or 4 top groups
Findings: entire sample 5

Geographical spread:
- Predominantly Western and Northern Europe
- Central and Eastern Europe underrepresented
Overall:

- Less than 60 HEIs in the three and four top group segment
- Biology 25, chemistry 25, physics 24, mathematics 19
- app. 1.3% of all ERASMUS eligible HEIs in Europe (ca. 4,900)
- Most HEIs excel in one subject (33), 15 in two, 4 in three and 4 in all four subject areas
Outlook to the future

- Publication of full results on December 5, 2007 under
  www.che-excellence-ranking.eu

- Important:
  Reflection of the methodological stipulations and boundaries of rankings!