ESF Member Forum
Evaluation of Funding Schemes and Research Programmes
Expectations, Practices and Experiences
Berlin, October 22nd to 23rd, 2007

Performance Assessment and Programme Evaluation in the Austrian Science Fund (FWF)

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The FWF is Austria’s central body for the promotion of basic research.

We invest in new ideas that contribute to an advance in knowledge and thereby to further developments. We are equally committed to all branches of science and the humanities and are guided in our operations solely by the standards of the international scientific community.
The FWF understands scientific research (fundamental or basic research) to mean research that aims not to make a profit but instead to develop scientific knowledge; its value relates primarily to its importance for science.
The FWF

- covers all fields of science and the humanities (unlike e.g. the British Research Councils)
- is focused on basic science (unlike e.g. RCN)
- does not run research institutes (unlike e.g. NWO)
- does not act as a strategic advisory council for the government (unlike e.g. RCN)
- uses *exclusively* reviewers from abroad (virtually unique in international funding scene)
- has a single budget for all disciplines (virtually unique in international funding scene)
The most important players (within Austria)
Sums granted 2006: 150,9 Mio. €*
(1998 – 2006 in Mio. €)
The „core“ of the funding machine
FWF Board - FWF Secretariat

<table>
<thead>
<tr>
<th>FWF Board</th>
<th>FWF Secretariat</th>
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<tbody>
<tr>
<td>26 Reporters, 26 Alternates</td>
<td>80 members of staff</td>
</tr>
<tr>
<td>Natural and Technical Sciences</td>
<td></td>
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<tr>
<td>(9+9)</td>
<td></td>
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<tr>
<td>Social Sciences &amp; Humanities</td>
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<tr>
<td>(8+8)</td>
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<td>Biological and Medical Sciences</td>
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<td>(9+9)</td>
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39 development, evaluation, service, etc.
41 direct project support
3 instruments:
Funding of research projects, funding of research networks, provision of fellowships for excellent investigators
# Funding Programmes

## Stand-alone Research Projects
- Publishing Costs

## International Mobility
- Schrödinger Grants (outgoing)
- Meitner Grants (incoming)

## Application Oriented
- Impulse Programme
- Translational Research Programme (incl. Translational Brainpower)

## Promotion of Women
- Career Development Programme
  - Firnberg Programme (Postdoc)
  - Richter Programme (Senior Postdoc)

## Research Networks
- with no predefined theme
  - Special Research Programmes
  - National Research Networks
  - Graduate schools
- with predefined theme
  - EUROCORES (with ESF)
  - NANO-Initiative (with FFG)

## Outstanding Researchers
- START & Wittgenstein Awards
FWF Evaluation approaches

- Evaluation of Projects
- Evaluation Programmes

**not performed:**

- Evaluation of individual scientist  
  (taken into account in the course of peer review of projects)
- Evaluation of research institutions  
  (taken into account in the course of peer review of projects)
- Performance Evaluation of scientific fields  
  (taken into account in the course of programme evaluations)
FWF "philosophy" for quality assurance

International peer review

Ex ante evaluation

Project period

Maximal flexibility

Ex post evaluation

International peer review
Projects: quality assessment

Cooperations

International scientific community

FWF

National scientific community


FWF Secretariat: Scientific & Non-Scientific Administrators

Referees (peers)

Applicants

Conflict of interest
Key points of the FWF procedure

- Strict bottom-up principle: no pre-defined themes, no quotas, no preferences
- Several people involved in all stages of procedure and in all decisions („checks and balances“)
- Close interactions with applicants for maximum transparency
- Independent international peer review as the basis for evaluation of quality
- Review texts are important basis for decisions (ratings are merely indicative)
- Discussion of and decisions concerning all projects from all scientific disciplines in a single Board containing representatives of all branches of science
<table>
<thead>
<tr>
<th><strong>General principles for review and decisions</strong></th>
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<tr>
<td><strong>Quality standard</strong></td>
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<td><strong>Peer review</strong></td>
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<td><strong>FWF Reporters</strong></td>
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<td><strong>FWF Executive Board</strong></td>
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<tr>
<td><strong>Number of reviews</strong></td>
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<td><strong>Funding Decisions</strong></td>
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<td><strong>Decisions</strong></td>
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<tr>
<td><strong>Justification</strong></td>
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<td><strong>ex post evaluation</strong></td>
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</table>
The FWF funding machine

Applicant → sci. / non-scientific administrator
- checks – formal and of contents

Vice-President
- assignment

Reporter + Alternate
- check of contents ⇒ suggestion: review / rejection

Executive Board
- request for reviews

Reporter + Alternate + Scientific Administrator
- preparation of funding decision

Board

international referees (at least 2)
- rejection

Approval
Multi-step evaluation of research networks

FWF

Board

Secretariat

Applicants

University

draft proposal
Multi-step evaluation of research networks

- Peers
- Preliminary review (written)
- FWF
- Applicants
- University
- Board Decision
- Draft proposal
- Full proposal
- Review
Multi-step evaluation of research networks

- Preliminary review (written)
- FWF
- Peers
- Applicants
- University
- University, local Gov.
- 1st funding period
- Review
- Board Decision
- Peer Review Panel
- Board Decision
Multi-step evaluation of research networks

FWF Board Decision

Peers

Preliminary review (written)

Review

1st funding period

Applicants

University

Local Gov.

University, local Gov.

Draft proposal

Full proposal

Report / prop. continuation

Board Decision

Peer Review Panel

Peer Review Panel

FWF
Multi-step evaluation of research networks

1st funding period

2nd, 3rd

draft proposal
full proposal

report / prop. continuation

preliminary review (written)

FWF

Peers

Board Decision

Peer Review Panel

Board Decision

Peer Review Panel

Applicants

University, local Gov.

University, local Gov.

University

local Gov.
What does “flexibility” mean?

- Overall budget + 5% “general project costs” (since 2003)
- no requirement for annual reports (only accounting)
- removal of the 6-year limit for “independent scientists” (2004)
- removal of the limit of 2 projects per project leader (2005)
- Senior Postdoc salary for experienced “independent scientists” (since 2005)
- extension of the length of time calculated for children: 3 years per child (since 2005)
annual accounts and brief (one page) progress report
comprehensive report at the conclusion of the project, consisting of 5 parts (a total of ca. 2,400 words or 4 pages):

subjected to peer review (1 ex-ante reviewer)

1. summary for PR work (German and English)
2. brief project report
   2.1. report on the scientific work
   2.2. personnel development – importance of the project for the scientific careers of those involved (including the project leader)
   2.3. effects of the project outside the scientific field
3. Information on project participants

4. Attachments for peer review and data collection

List 1.a. scientific publications
   (the publication list must mention for each work: all authors; full title;
   series/journal title; year; volume; and page numbers.
List 1.b. publications for the general public and other publications
List 2 project-related participation in international scientific conferences
List 3 Development of collaborations (national, European, international)
List 4 “Habilitations” (professorial qualifications) /
   PhD theses / diploma theses
List 5 Effects of the project outside the scientific field
   (where appropriate)
List 6 Applications for follow-up projects

5. Feedback about Work with the FWF
Closing of the project

- **accounts**
- **final report**

**Scientific Administrator**
- Checks – formal and of content
- Selection of one referee from initial review

**international referee (min.1)**

**project leader**
- Review
- Comments

**Scientific Administrator**

**Board**
- Taken into account in future funding decisions

**Reporter + Alternate**
- Science communication, reports, evaluations
- Computer entry of project output
Reviewers are asked to comment on:
1. the scientific success of the project;
2. the development of human resources in the course of the project;
3. effects beyond the scientific field (in the sense of applications in or impacts on social, cultural, ecological, medical, economic and/or technological areas);
4. the running of the project with regard to use of available resources; and
5. the future perspectives of the research work.
### Collection of project output data

#### Evaluation der Förderung (P19004-N18 - 19.10.2007)

**Zusammenarbeit mit dem FWF**

- Antragsrichtungen
  - Umfang
  - Übersichtlichkeit
  - Verständlichkeit
- Verfahren
  - Beratung
  - Verfahrensdauer
  - Transparenz
- Projektbegleitung
  - Verfügbarkeit
  - Ausführlichkeit
  - Verständlichkeit
  - Finanzverkehr
- Berichte/Prüfung/Verw.
  - Aufwand
  - Transparenz
  - PR/Verwertung

#### Projektovaluierung

- **Humanressourcen (Liste 4)**
  - Berufungen
  - Habilitationen
  - Dissertationen
  - Diplomarbeiten
  - sonstige
- **weiterreichende Effekte (Liste 5)**
  - wiss. Veranstaltungen
  - Würdigungen/Preise
  - Patente/Lizenzen
  - sonstige Resultate
  - Auswirkungen
  - Folgaktivität/FWF
  - Folgaktivität/national
  - Folgaktivität/international

- **Fachtagungen (Liste 2)**
  - Invited Lectures
  - Lectures
  - Posters
  - Anderes
- **wichtigste Kooperationen (Liste 3)**
  - Name
  - N
  - E
  - D

**Publikationen...**
Publications

ca. 10,000 Scientific Journals
Evaluations commissioned by FWF

- Evaluation of Mobility Programmes (2006)

External evaluations

- Evaluation of Impulse projects (2007)

evaluation reports: http://www.fwf.ac.at/de/public_relations/publikationen/publikationen.html
Selected results
Evaluation of FWF-Priority Research Projects (Research Networks)

Publications Austria and FWF-Priority Research Projects

Rebased Impact 2001

- Medicine
- Biological Science
- Environmental Science
- Mathematics
- Physical Sciences
- Engineering
- Business and Management Studies

FSP/SFB vs. overall average Austria
Impact with/without FWF funding in %

- Biocenter Vienna (Medicine):
  - IF without FWF: 34.7%
  - IF with FWF: 48.3%

- Dep. of Medicine, University of Innsbruck:
  - IF without FWF: 40%
  - IF with FWF: 60%

Source:
Retti, Innsbruck
Kuchler, VBC (Medicine)
E. Schroedinger Fellowship (outgoing programme, started: 1985)

**Strengths**
- Highly effective
- 15 years after grant more than 50%: full professors
- Immediately after fellowship more than 80% at least project-leader
- 88% have ongoing contacts/collaborations with host
- Publication-Output: in average 4.2 publications in peer-reviewed journals
**Weaknesses:**

- Duration: especially for natural scientists 2 years are not sufficient
- Critical return-phase
  - no forum to discuss, no interesting jobs,

**Consequences:**

- Possibility to apply for research project for 3 years,
  - 2 to be spent abroad, the final year in Austria
Lise Meitner (incoming programme, started 1997)

Strengths

- In 87% of the grants new research areas have been opened or partly opened thanks to the stay of the Meitner fellow
- More than 50% achieved objective of international networking for the institute
- In 95% of the cases applicants and Co-applicants have ongoing contacts
- Publication-output: in average 4.6 publications in peer-reviewed journals
**Weaknesses:**
- Duration of the funding (extension for 2nd year only with external evaluation)
- No support for keeping long term relations

**Consequences:**
- Applications possible for 24 months
- Alumni-Club / Internet portal for Meitner fellows
Main Results:

- FWF is Austria’s most important funding institution for basic research (mainly on universities)
- Funding is highly effective and supports the development and concentration of high-quality scientific potential as well as the careers of individual scientists
- Procedures (peer – review, decisions, evaluation) are effective and show no bias

Suggestions:

- Extension of FWF’s role in the NIS (Agency function, strengthening of strategic and analytical capacities)
- Continuation of FWF’s core business, streamlining of portfolio, open to thematic programmes
- Significant increase of FWF’s budget, financing of overheads (increasing the competitive share of university financing)
- Streamlining of governance structures, modification of procedures according to new challenges
Economic and Scientific Wealth

D.A. King, Nature 430, 15 July 2004
- keeping high proportion of stand-alone projects
  innovation-core in research funding

- financing of project-overheads
  performance dependent share of university budget
  **goal:** 20% of direct project costs in 2007, increasing to 50% by 2009

- increase of Priority Research Projects
  Basis for new programme „Clusters of Excellence“

- increase of funding for „Talents“
  young researchers, excellent investigators, mobility, female scientists, **doctoral programmes „plus“**

- insist on an increase of budget (9% p.year)
Development and Implementation of an „Excellence Strategy on all Levels and in all Sections of the NIS“

December 2005, FWF:
Draft of a new funding Programme „Clusters of Excellence“

November 2006, FWF (bm:wf):
„Excellence Initiative in Science“

December 2006:
Start of the development of funding programmes
FWF Excellence Initiative - Instruments

1) Extension and flexibilization of existing funding instruments (e.g.: increased FWF funding, extension of funding programs for women in science)

2) Implementation of support mechanisms for positive developments (e.g.: financing of overheads)

3) New Structures and Funding Mechanisms (e.g.: Clusters of Excellence, Doctoral Programmes „plus“)
Excellence Initiative - Model

Clusters of excellence, K2-centers, ISTA, others?

Priority research projects K-Centers, etc.

Individual researchers

existing excellence

IMBA, IMP, RICAM, IQOQI, etc.

new Programs

Organisatorial Complexity

Scientific (technological) "Substance"