

European Research Council (ERC) Rationale and Plans

***Putting Investment for Excellence
at the Heart of
European Science Policy***

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Does Europe Need Pioneering Research?

- **What will be our future competitive advantage?**
 - *Ageing and shrinking population?*
 - *Labour and Social Security costs?*
 - *Cheap mass production and services?*
 - *Natural resources?*
 - *Capital accumulation and management?*



Europe Can Only Compete As A Knowledge Society

- **Leadership in Science, the Endless frontier**
- **The Knowledge Triangle IS a Triangle**
Education / Research / Innovation
- **Investment in Excellence:**
an imperative, not an option



To Remain Vibrant, Europe Must

- **Generate, Attract, Retain Top Research Talent**
- **Focus the Research System on Excellence**
- **Invest Consistently, Across Borders**
- **Encourage Collaboration and Competition**
- **Encourage and Trust the Young**
- **Create Attractive Career Paths**
- **Create Competitive Champions League**

(by merit only, as in football)



Europe Can Develop World-Class Research Institutions / Organisations / Programmes

- **Science-driven Intergovernmental System:**

CERN, EMBO, EMBL, ESO, ESA, ILL, ESRF, JET/EFDA

- **Successes of the EC System:**

"Science" Marie Curie, some Thematic & Collaborative Programmes

- **But Member States Insisted:**

EC to Support Industrial Policy;

Science Tolerated at the Margins

- **Dirigiste EC Impulse**

Administrative Uniformity (from Farm Subsidies to Research)



An Idea Whose Time Has Come

- **Convergence of Mobilized Research Community**

- ELSF (EMBL, EMBO, FEBS): Meetings, Other Disciplines

- Stockholm (Royal Academy meeting, 2001):

Europe should Invest in Fundamental Research

- **With Political Leadership:**

- Danish Presidency: Copenhagen Meeting, Nov. 2002

Do we Need a European Research Council?

Surprising Unanimity: YES!

- Minister J M Gago: Lisbon Encounter

- Commissioner P. Busquin: ERA

- **High Level Groups: ERCEG (Mayor), ESF Group (Sykes)**

- **ISE Manifesto (Science Vol. 305, 6 August 2004, p. 1327)**



The Birth of the ERC - 1

- **DG A. Mitsos formulates added value (2003):
Competition for excellence @ EU level**
- **03/04: EU Council agrees on funding scheme:
frontier basic research (Lord Sainsbury's support)**
- **04/05: EC proposes ERC funding through FP7**
- **Commissioner Potočnik entrusts Patten Committee
to identify Scientific Committee Members**
- **07/05: 22/400 nominees proposed, all accepted**



The Birth of the ERC - 2

ScC meets informally, works intensively 10/05 – 01/07

- **The Immediate ScC Decisions:**

Develop the Structures and define the Strategy in time, to implement the ERC upon the formal co-decision: Commission, Council of Ministers, Parliament

- **Elect the Chair and Vice Chairs**
- **Overcome the ScC/Executive Agency split: Establish ERC Board, Recruit a Secretary General**
- **Towards an Integrated, Autonomous ERC**



The Birth of the ERC – 3

Autonomy, Integrity, Efficiency

11/06 EP adopts FP7 & Ideas Programme

- **Lead by Scientific Council**
(Strategy, Work Programme)
- **Implemented by Commission**
(DIS -> Executive Agency)
- **Integrated Operation:**
 - Secretary General
 - ERC Board(ScC Chair; VCs; SG; Director EA)



The ERC Strategy, 1

- **Focus on essentials, obvious gaps in Europe**
 - *Opportunities and independence for young scientists*
 - *Individual frontier research projects (ca. RO1s)*
 - *Significant funding to make a difference*
- **Keep it simple**
 - *All fields of science and scholarship are eligible*
 - *Excellence is the sole criterion*
 - *Research results are the only deliverable*
 - *Select Referees & Evaluation Panels by excellence*



The ERC Strategy, 2

- **Keep it flexible**
 - *Review panels judge investment levels*
 - *Researchers can rebudget*
 - *Grants are portable*
- **Trust the dynamic of science**
 - *Interdisciplinarity is encouraged*
 - *Excellence attracts excellence*
 - *The effects of critical mass*
 - *From individual to institutional excellence*



ERC's Strategy: 1st Major Funding Programme (See <http://erc.europa.eu>)

Starting Independent Researcher Grant (ERC StG)

- *The only programme to be funded in 2007*
- *Ca. 300 M€, 200 grants @ 1.5M€ average for 5 years*
- *i.e. 200 new investigators p.a., ca. 1400 in 7 years*

Sole selection criterion: Excellence of person & proposal

- **Eligibility:**
 - *≤ 8 years since Doctorate + 3yrs for service*
 - *Newly established or offer of position*
 - *Within EU or Associated States*
 - *No nationality criterion*

3 Rs: Recruit, Repatriate, Retain TOP TALENT



ERC's Strategy: 2nd Major Funding Programme (See <http://erc.europa.eu>)

Advanced Investigator Grant (ERC AG)

- *Start up in 2nd year, yearly thereafter*
- *Annual budget minus ERC Starting Grants*
- *Growth From ca. 600 M€ to ca. 1 billion €/year; 3 M€ average*
- *ca. 200/500 grants of 3M€ committed each year*
- **Sole selection criterion: Excellence of proposal & track record**
- **Eligibility:** (a) *investigators at all career stages in Europe*
(b) *No age limit or nationality criterion*
(c) **The 3 Rs**



Provisional Timetable 2007

November 2006: SG and Board operational

January: FP7 and ERC operational

25 April: ERC StG Application Deadline

1st Stage Panel meetings

Invitation for Stage 2 applications: 2nd week July

2nd Stage Applications Deadline: 17 September

Grant Awards announced: Mid-November



Applying for ERC Grants

- **Two-step procedure (address oversubscription)**
 - 1st stage: Outline proposal (max 8 pp)
 - 2nd stage: Full proposal (max 16 pp)
- **Proposal components**
 - CV + self-evaluated achievements + funding ID
 - Scientific & technical aspects of projects
 - Scientific environment and resources (incl. institutional commitment)
 - Electronic submission only (EPSS)
 - Pre-registration via EPSS (# proposals/area)



Evaluation Criteria (Excellence Criterion)

- **Potential of PI to be world class leader**
 - Quality of research output
(quality of peer reviewed publications:
creative? groundbreaking?)
 - Quality of track record: project conception, student supervision, ability to initiate new lines of thinking
- **Quality of Research Proposal**
 - Ground-breaking nature of proposed project
 - Appropriateness of methodology
 - Potential impact in the field



Evaluation Structure

- 20 Panels @ 11 members
- Broad panels, overlapping disciplines
- Encourage interdisciplinarity
- Distinguished panel reviewers
- Stage 1 outcome: Invite best for full application (2-3 x number of potential grants)
- Stage 2: Evaluation in depth; assisted by remote expert referees
- Interviews
- Outcome: Award, determine amount & indicative budget



Panel Examples

- **Social Sciences and Humanities (5 Panels)**

- **SH1 - Individuals and organisations:** economics, management, demography, geography, urban and environmental studies.

- **Physical and Engineering Sciences (8 Panels)**

- **PE3 - Condensed matter in physics and chemistry:** Condensed matter (structure, electronic properties, fluids,...), statistical physics, nanosciences, reactions.

- **PE6 - Engineering sciences:** Electronics, product design, process design & control, construction methods, fluid and solid mechanics, energy systems, bio-engineering.

- **PE7 - Universe science:** Astro-physics/chemistry/biology/geology; solar system; stellar, galactic and extragalactic astronomy, cosmology; space science, instrumentation.

- **Life Sciences (7 Panels)**

- **LS1 - Molecular, cellular and developmental biology:** Molecular biology, biochemistry, biophysics, structural biology, cell biology, cell physiology, signal transduction and pattern formation in plants and animals.

- **LS2 - Genetics, genomics, bioinformatics and systems biology:** Molecular and cell genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology.

- **LS5 - Evolutionary, population and environmental biology:** Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, ecotoxicology.

