Generous Opportunities of European Research Council

Aslı VURAL
ERC National Contact Point in Turkey

The Scientific and Technological Research Council of Turkey - TÜBİTAK
Questions to be answered

What is in ERC for me?

How can I prepare?

Can TÜBİTAK help me?

What is a winning strategy?
What is ERC?

• Funded through the EU Framework programmes for Research and Innovation
• For the period 2014-2020, Horizon 2020
• An autonomous pan-European funding body set up by the EU in 2007 led by scientists after a long struggle
• **Mandate:** to encourage the highest quality research in Europe through competitive funding of frontier projects
“Today the distinction between 'basic' and 'applied' research has become blurred, due to the fact that emerging areas of science and technology often cover substantial elements of both.

As a result, the term 'frontier research' was coined for ERC activities since they will be directed towards fundamental advances at and beyond the 'frontier' of knowledge.”

Characteristics:
• Stands at the forefront of creating new knowledge
• Risky endeavour
• No disciplinary boundaries
Guiding principles of the ERC Grants

any nationality

any field of research

high risk / high gain

best settings to foster creativity

Scientific Excellence

a single Principal Investigator

a single host institution
ERC Funding Schemes

**Starting Grants**
- starters (2-7 years after PhD)
  - up to €1.5 + 0.5 million for 5 years
- Prerequisite: 50% of time in EU+AC
- at least one important publication

**Consolidator Grants**
- consolidators (7-12 years after PhD)
  - up to €2 + 0.75 million for 5 years
- Prerequisite: 40% of time in EU+AC
- several important publications

**Advanced Grants**
- track-record of significant research achievements in the last 10 years
  - up to €2.5 + 1 million for 5 years
- Prerequisite: 30% of time in EU+AC
- 10 senior authored important publications or 3 major monographs

**Proof-of-Concept**
- bridging gap between research - earliest stage of marketable innovation
- up to €150,000 for ERC grant holders
• **Maternity:**
  extension by 18 months for each child born before or after PhD

• **Paternity:**
documented amount of time for each child born before or after PhD

• **Long-term illness:**
  over 90 days for the PI or a close family member (child, spouse, parent or sibling)

• **Clinical training or national service:**
documented amount of time since the award of the first PhD
# Forthcoming ERC calls

<table>
<thead>
<tr>
<th>ERC calls</th>
<th>Call Publication</th>
<th>Submission Deadline(s)</th>
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<tr>
<td><strong>Advanced Grants</strong></td>
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<td>ERC-2016-AdG</td>
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<td><strong>Starting Grants</strong></td>
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<td>ERC-2017-StG</td>
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<td><strong>Advanced Grants</strong></td>
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<td>ERC-2017-AdG</td>
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<td>31 August 2017</td>
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</table>
After 9 years

- **Recognition** by research community
- **17%** of the overall Horizon 2020 budget
- **~5,000 projects** and **~50,000 applications**
- **eight Nobel laureates** and **three Fields Medalists**
- **over 20,000** in high impact journals
- **average six team members**
- **Horizon 2020 estimation**
  - ✔ **7,000 grantees**
  - ✔ **42,000 team members**
  - ✔ **11,000 doctoral students**
  - ✔ **16,000 postdoctoral researchers**
Turkey’s Performance in ERC

In 2007-2015: 15 ERC Grants, 24.75 million €

<table>
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<tr>
<th>Year</th>
<th>Submitted Proposals</th>
<th>Number of Funded Projects</th>
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<tr>
<td>2007</td>
<td>164</td>
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<td>2015</td>
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There is a high potential to increase Turkey’s ERC participation
During the proposal preparation stage:
• Bridge between you and ERC
• Guidance in proposal writing
• Information on Host Institutions in Turkey
• Pre-evaluation support of your proposal
• Newly established “TÜBİTAK Principle Investigator Advancement Programme” can fund the activities below:
  – Participation to trainings on proposal writing and interview techniques
  – Travel needs
  – Pre-Evaluation of your proposal by an experienced consultant company/consultant
TÜBİTAK Award for Above Threshold Proposal:
  – For the researchers who passed to the second evaluation stage of ERC
    • €6,000 B
    • €9,000 A (out of budget)
    • €12,000 A (reserve list) *
  – Paid at once after the evaluation is complete

TÜBİTAK’s national funding for revision of the ERC proposal idea (under construction)

TÜBİTAK’s funding for researchers who received A mark and not funded twice (under construction)
  – Up to %100 of the original ERC proposal budget
TÜBİTAK Supports your ERC Success

• **TÜBİTAK Award for Successful ERC Projects**
  – Up to €350,000 * paid in periods
  – For the projects that will be conducted in Turkey
  – FP7 and Horizon 2020 ERC Projects

• **TÜBİTAK Award for ERC Projects Transfered to Turkey**
  – Up to €35,000 * paid at once after the transfer **
  – For the ERC projects that will be transferred to a host institution in Turkey before or after the project start date

• **TÜBİTAK’s National Top-Up Funding** (under construction)
  – A top-up funding to cover:
    • the budget cut in an ERC project
    • additional budget needed during the ERC project
  – Additional overhead for the host institution (%50 of budget of ERC)

*calculated proportional to project budget and with respect to the grant category
** calculated proportional to project budget left
Success Stories from Turkey

1st Wave in 2012!

Fabrication and characterization of dielectric encapsulated millions of ordered kilometer-long nanostructures and their applications

• Prof. Mehmet Bayındır, Bilkent Univ., 1.5 million €, Starting Grant

Bioengineering prediction of three-dimensional vascular growth and remodeling in embryonic great-vessel development

• Asst. Prof. Kerem Pekkan, Carnegie Mellon -> Koç Univ., 2 million €, Starting Grant
Success Stories from Turkey

2nd wave in 2013!

Wearable Augmented Reality 3D Displays
- Prof. Hakan Ürey, Koç Univ., 2.5 million €, Advanced Grant

Communication Theoretical Foundations of Nervous System Towards BIO-inspired Nanonetworks and ICT-inspired Neuro-treatment
- Prof. Özgür Barış Akan, Koç Univ., 1.8 million €, Consolidator Grant

Nonlinear Laser Lithography
- Assoc. Prof. F. Ömer İlday, Bilkent Univ, 2 million €, Consolidator Grant

The RNA bridge between IRE-1 and PKR leading to metaflammation: discovery and intervention in atherosclerosis
- Asst. Prof. Ebru Erbay, Bilkent Univ, 1.5 million €, Starting Grant
Success Stories from Turkey

3rd Wave in 2014!

Deciphering and Reversing the Consequences of Mitochondrial DNA Damage

• Asst. Prof. Cory Dunn, Koç Univ., 1.5 million €, Starting Grant

Novel Nanoengineered Optoelectronic Biointerfaces

• Asst. Prof. Sedat Nizamoğlu, Koç Univ., 1.5 million €, Starting Grant
Success Stories from Turkey

4th wave in 2015!

- **Biocompatible and Interactive Artificial Micro- and Nanoswimmers and Their Applications**
  - Asst. Prof. Giovanni Volpe, Bilkent Univ., 1.5 million €, Starting Grant

- **Dissecting the function and regulation of centriolar satellites: key regulators of the centrosome/cilium complex**
  - Asst. Prof. Elif Fırat Karalar, Koç Univ., 1.5 million €, Starting Grant

- **Industrialisation and Urban Growth from the mid-nineteenth century Ottoman Empire to Contemporary Turkey in a Comparative Perspective, 1850-2000**
  - Assoc. Prof. Mustafa Erdem Kabadayı, Koç Univ, 1.5 million €, St Grant

- **Exposure to Political Violence and Individual Behavior**
  - Asst. Prof. Arzu Kıbrıs,, Sabancı Univ, 1,5 million €, Starting Grant
Success Stories from Turkey

4th wave in 2015!

**FLAMENCO: A Fully-Implantable MEMS-Based Autonomous Cochlear Implant**

• Prof. Dr. Haluk Külah, METU, 2.0 million €, Consolidator Grant

**Market Selection, Frictions, and the Information Content of Prices**

• Assoc. Prof. Alp Atakan, Koç Univ., 1 million €, Consolidator Grant

**Graphene-Based Smart Surfaces: From Visible to Microwave**

• Asst. Prof. Coşkun Kocabaş, Bilkent Univ, Consolidator Grant
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The Power of Quantum Computers

Quantum computing promises to add subtle grey shades to the black-and-white logic of today’s digital computers, replacing the binary strings of ‘0’s and ‘1’s now used to encode data with the unit of quantum information known as a ‘qubit’.

Starting Grant recipient Julia Kempe, a highly qualified international researcher now working in Israel, will bring a similarly sophisticated mix of physics and mathematics to the study of phenomena that will provide unprecedented problem-solving powers to the IT tools of the future.

Proje: QUCO
Baş Araştırmacı: Julia Kempe
 Çağrı: ERC-2007-StG
Alan: Fen Bilimleri ve Mühendislik
Ev Sahibi Kurum: Tel Aviv Üniversitesi, İl
Milliyet: Almanya
Bütçe: 744 000 €
Aytıntılı Bilgi: www.cs.tau.ac.il/~kempe/
Tarski’s Revolution: a New History

The concept of truth plays a central role in our cognitive lives, and has been the preoccupation of philosophers since the times of Plato and Aristotle. In the 1930s, Polish logician Alfred Tarski was the first to express truth in mathematical terms, but the roots of his work have since remained largely in the shadows.

An ERC Starting Grant will enable a team headed by Italian Arianna Betti to explore his revolution in semantics, bringing deserved prominence to the highly original Eastern European school of thought.

Proje: TRANH
Baş Araştırmacı: Arianna Belti
 Çağrı: ERC-2007-StG
Alan: Sosyal ve Beşeri Bilimler
Ev Sahibi Kurum: VU University Amsterdam, NL
Milliyet: İtalya
Bütçe: 900 000 €
Aytıntılı Bilgi: www.wijsbegeerte.vu.nl/betti
Mothers, Grandmothers and the Evolution of Prolonged Lifespan in Humans

While most animals die soon after losing the ability to reproduce, the human lifespan continues for many more years. The reason behind this apparent evolutionary oddity may be that the survival of women allows them to devote more effort to helping adult offspring produce a further generation — which could be the most efficient strategy for success.

With the support of an ERC Starting Grant, Finnish zoologist Virpi Lummaa aims to prove that caring grandmothers are drivers of genetic continuity and proliferation.
Aged 36, Professor Novoselov, Russian and UK citizen, is one of the youngest Nobel Prize winners. He received both an ERC grant and now, together with his colleague Prof. Andre Geim, the Nobel Prize for his studies of "Graphene", a one-atom-thick crystal with unusual quantum conductive properties. It is tipped for a number of future applications in electronics and photonics.

“Science should be fun, and you don’t always need to do expensive multi-million dollar experiments to be on the cutting edge of research.”
ERC Proposal Template

Administrative forms (Part A)
1 – General information
2 – Administrative data of participating organisations
3 – Budget
4 – Ethics
5 – Call specific questions

Part B1 (submitted as pdf)
Evaluated in Step 1 & Step 2
Text box - Cross-panel explanation
a – Extended synopsis 5 pages
b – Curriculum vitae 2 pages
c – Track-record 2 pages
Appendix – Funding ID no page limit

Part B2 (submitted as pdf)
Not evaluated in Step 1 (Step 2 only)
Scientific proposal 15 pages
a – State-of-the-art and objectives
b – Methodology
c – Resources

Annexes
Commitment of the Host Institution, PhD Certificate (for StG and CoG), Documentation for ethical issues, Documentation for requests for eligibility extensions
ERC Peer Review Evaluation System
ERC Evaluation Process

1. Submission of full proposals
2. Eligibility check
3. Step 1 (remote) evaluation on the basis of section 1 of proposal* by panel members
4. 1st Panel meeting
5. Proposals passing to step 2
6. Individual assessment of full proposal by panel members & referees
7. AdG: 2nd Panel meeting
8. Proposals selected for funding
9. StG and CoG: 2nd Panel meeting incl. interviews of applicants
3 domains and 25 panels

Each panel:
Panel Chair and
10-15 Panel Members

Life Sciences (LS) - 9 panels
LS1 Molecular & Structural Biology & Biochemistry
LS2 Genetics, Genomics, Bioinformatics & Systems Biology
LS3 Cellular & Developmental Biology
LS4 Physiology, Pathophysiology & Endocrinology
LS5 Neurosciences & Neural disorders
LS6 Immunity & Infection
LS7 Diagnostic Tools, Therapies & Public health
LS8 Evolutionary, Population & Environmental Biology
LS9 Applied Life Sciences & Non-Medical Biotechnology

Social Sciences and Humanities (SH) - 6 panels
SH1 Individuals, Markets & Organisations
SH2 Institutions, Values, Environment and Space
SH3 The Social World, Diversity, Population
SH4 The Human Mind and its Complexity
SH5 Cultures & Cultural Production
SH6 The Study of the Human Past

Physical Sciences & Engineering (PE) - 10 panels
PE1 Mathematics
PE2 Fundamental Constituents of Matter
PE3 Condensed Matter Physics
PE4 Physical & Analytical Chemical sciences
PE5 Synthetic Chemistry & Materials
PE6 Computer Science & Informatics
PE7 Systems & Communication Engineering
PE8 Products & Processes Engineering
PE9 Universe Sciences
PE10 Earth System Science
Submission to Panels

• Proposals are submitted to a *Targeted Panel* (of PI's choice)
  – Can flag one “*Secondary Review Panel*”

• **Applicant chooses his/her panel**, this panel is “responsible” and takes ownership for the evaluation of the particular proposal

• Switching proposals between panels not possible unless clear mistake on part of applicant, or due to the necessary expertise being available in a different panel

• **But**: In case of cross-panel or cross-domain proposals, evaluation by members of other panels possible

• If you think that your proposal is cross-panel or cross-domain, explain in proposal part B1
What is evaluated?

Excellence is the sole evaluation criterion

Excellence of the Research Project

- **Ground breaking nature** Important challenge? Substantially beyond the current state of art? High-gain/high-risk balance
- **Potential impact** Possibility of a major break-through?
- **Scientific Approach Feasibility, novel concepts/methodology**

- **Excellence of the Principal Investigator**

  - **Intellectual capacity**: Track-record, capacity to go significantly beyond the state of the art, evidence of creative independent thinking
  - **Creativity**
  - **Commitment**: Willing to devote a *significant* part of PI's working time

Referees and panels **evaluate and score** each criterion, which results in a ranking of the proposals.
At the end of step 1

**A** is of sufficient quality to pass to step 2 of the evaluation; (app. 20%)

**B** is of high quality but not sufficient to pass to step 2 of the evaluation (wait 1 year);

**C** is not of sufficient quality to pass to step 2 of the evaluation. (wait 2 years)

At the end of step 2

**A** fully meets the ERC's excellence criterion and is recommended for funding if sufficient funds are available; (app. 10%) (no waiting)

**B** meets some but not all elements of the ERC's excellence criterion and will not be funded. (no waiting)
Tips for a successful ERC proposal
442 evaluation summary reports from Turkey evaluated over two criteria

- Research Project Criteria
- Principle Investigator Criteria

Research Project Criteria

- The proposal is too narrow/too broad
- Insufficient/no project description (state of the art, objectives, methodology, scientific detail, approach)
- The proposal does not indicate the advantages of the proposed approach over other research that will be carried out by other groups
- The proposal is essentially an applied project which is unlikely to result in important scientific breakthroughs
- Incremental rather than ground-breaking
Common Weakness of Proposals from Turkey

Research Project Criteria (continued)

- High gain but medium/risk
- Not well supported by preliminary experimental data
- The proposed work is a straightforward extension of the PI’s current research activities

- Potential applications might be restricted
- Classical/conventional methodology
- This kind of research could be support by the local resources
- Missing strategy or vision for the implementation ethical issues
- Too descriptive proposal
Common Weakness of Proposals from Turkey

Principle Investigator Criteria

- The candidate has limited international experience/exposure/recognition/publication

- Low publication, low citation, low impact factor
- Little/no evidence of independent research (For StG and CoG)
- The potential for future leadership in this area of research is not high (For StG and CoG)
The most Important Tip!

- Evaluators read only B1 in the 1st step of the evaluation. So devote considerable amount of time to the preparation of B1. It should be convincing together with the abstract.
- But avoid repetition in B1 and B2.
Key Messages from your NCP

• Read Guides Carefully
  – Annual ERC Work Programme
  – Call specific Information for Applicants (rules + evaluation criteria)
  – Other programmes under H2020

• Pay attention to «State-of-the-Art and Objectives» heading
  – Literature + ongoing unpublished work through projects

• Page Limits: They Count

• Use figures and tables
  – Point out what is not so obvious
Key Messages from your NCP

• Reviewing previously funded ERC projects
  – Database of 5000 ERC projects
  – Database of other funding agencies: NSH, NIH etc.

• Support from your colleagues
  – Already funded ERC Grantees in Turkey
  – Turkish ERC Grant holders in Europe
  – Other colleagues

• Support from Non-Active Panel Members

• Mock interview is essential before a real interview. Why not organize your own mock interview before submitting your proposal?
Key Messages from your NCP

• Wording, wording, wording!
  – A project proposal is not an article
  – Write for two types of readers:
    • generalists and specialists
  – Use short, simple and clear sentences for readability
  – Use a clear and concise writing style
  – Use Basic English, avoiding jargon or excessive language
  – Use an active voice rather than passive
  – Well structured, logically organized and nice looking proposal
  – Make it joy to read
Key Messages from you NCP

• Generate Preliminary Data
  – Be careful about how much of your proposed work is preliminary

• Plan Ahead Your Budget and resources

• Leave Time for Ethical Issues

• Reliability of Your Time Commitment
  – Check if your CV and Funding ID is supporting your commitment

• Support from your ERC Institutional Contact Points

• TÜBİTAK ERC National Contact Point Supports You

• Apply to TÜBİTAK Principle Investigator Advancement Programme
Some Useful Documents

• Examples of some striking ERC projects
  • http://cordis.europa.eu/projects

• Links:
  • http://erc.europa.eu/
  • www.h2020.org.tr
Teşekkürler

Aslı VURAL
Derya DÖNERTAŞ
ERC Ulusal İrtibat Noktası
TÜBİTAK AB Çerçeve Programları
Ulusal Koordinasyon Ofisi
T: +90 312 298 9403 veya 9497
E: ncperc@tubitak.gov.tr
URL: www.h2020.org.tr