I bandi Telethon per il finanziamento della ricerca

Università degli Studi di Milano
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Direzione scientifica - Fondazione Telethon
Agenda

- Telethon in a nutshell
- The peer review process: Actors and roles & Review phases
- Evaluation criteria
- The 2016 Call for Research Proposals
- General considerations
Telethon in a nutshell
About us

- The Telethon Foundation is an Italian biomedical research charity founded in 1990 out of the will of a group of patients.
- We rely on donations from the general public through fund raising.

**MISSION**
To advance biomedical research towards the cure of genetic diseases

**VISION**
To convert results of excellent, selected, and sustained research into available therapies

We give priority to rare genetic diseases that are neglected by major public and private investments.

**Our Stakeholders**

- RESEARCHERS
- PATIENTS
- DONORS

**Telethon’s Responsibility**

- SCIENTIFIC RESULTS (Research monitoring and development)
- FUNDRAISING (Financial accountability and expenses control)
- FUND ALLOCATION (Merit-based selection of research)
Telethon’s investment in research

The research ladder

- **Diagnostic, observational and palliative studies**
- **Basic research**
- **Pre-clinical research**
- **Clinical trials**
- **Therapy**

Percentage of funds awarded

<table>
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<tr>
<th>Year</th>
<th>Basic Research</th>
<th>Pre-Clinical Research</th>
<th>Clinical Trials</th>
<th>Therapy</th>
</tr>
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<tbody>
<tr>
<td>1991-1995</td>
<td>91%</td>
<td>1%</td>
<td>2%</td>
<td>6%</td>
</tr>
<tr>
<td>2011-2015</td>
<td>37%</td>
<td>31%</td>
<td>27%</td>
<td>5%</td>
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Source: TRic database, Telethon, October 2015
The Telethon research portfolio

Intramural research

- 177 M€ research investment
- 289 research grants

Telethon Institute of Genetics and Medicine
Naples/Pozzuoli

San Raffaele - Telethon Institute of Gene Therapy
Milan

Dulbecco Telethon Institute
Career development program

EXtramural research

- 274 M€ research investment
- 2,281 research grants

EXTERNAL RESEARCH PROJECTS
- General projects
- Neuromuscular clinical projects
- Program projects
- Exploratory projects
- Collaborative projects

GENETIC BIOBANKS AND RESEARCH SERVICES

UNDIAGNOSED DISEASES PROGRAM

FELLOWSHIPS

KEY FIGURES 1990-2015

- 451 M€ research investment
- 2,570 research grants
- 1,556 PIs awarded
- 475 genetic diseases studied
- 10,222 articles published

Excellence-driven grant allocation

TELETHON’S ROLE

Steering and management

Funding and support
Funded Extramural research - 2015

- **33 projects** awarded within the **Telethon General Grant Call**:
  - 18 mono- and 15 multi-center projects (58 centers in total)
  - approved Budget 9,85 M€ (average budget per application: 290K€; average budget per center 170K€)
  - 273 accepted Applications

- **11 projects** awarded within the **Telethon Exploratory Projects Call** (approved budget 0,5 M€; 87 accepted Full Applications)

- **2 career projects** awarded within the **Dulbecco Telethon Institute (DTI) career award** (610K€ each, over 5 years; 24 accepted Applications)

- **6 projects** awarded within the **Telethon-UILDM Call for Clinical Grant Proposals** (approved budget 1,7 M€ over 2 years; 20 accepted Full Applications)
The Telethon peer review process
## The ‘selection’ process at a glance

<table>
<thead>
<tr>
<th>Phase</th>
<th>Responsibility</th>
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<tr>
<td>1</td>
<td>Call for application and examinations of projects</td>
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<tr>
<td>2</td>
<td>Evaluation of the projects</td>
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<tr>
<td>3</td>
<td>Plenary review meeting</td>
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<tr>
<td>4</td>
<td>Approval of funding</td>
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Actors & Roles
The Telethon Scientific Office

- Manages the entire peer review process
- Provides the necessary distance between Applicants and Reviewers
- Duties:
  - Preparing the Calls for applications
  - Defining the composition of the Telethon Scientific Committee by inviting members from the academic community
  - Selecting External Reviewers and ad-hoc members of review panels
  - Organizing the review sessions
  - Providing feedback to Applicants

Key figures in the Office are Research Program Managers: former researchers with a strong background in biomedical research
Actors & Roles
The Scientific Committee

- **Conducts the review process** and **provides funding suggestions** on the basis of shared criteria
- All members participate in a final **plenary review meeting** to discuss the proposals
- Members are **internationally recognized leaders** in their field of expertise
- Max 2 **Italy-based Italian** members (foreign-based Italian members well-accepted)
- Participation on a **4-year rotation basis**, regulated by a **contract with Telethon**
- **Composition may vary** according to the type of Applications being reviewed
- Although the list of members is publicly available (website), the **identity of Reviewers** involved in each application is **not disclosed to the Applicants**
Necessary because of the **diversity of the Applications** received within the General Call

Their support is meant to provide members of the Scientific Committee with **specific comments on each Application**

**Chosen by Research Program Managers** from among the international scientific community on the basis of:

- **Specific scientific expertise** related to each individual Application
- **Absence of conflicts of interest** with the Applicant
- Other criteria (e.g. suggestions / exclusion by Applicants)

External Reviewers remain **anonymous** to the Applicants
Geographical distribution of Telethon Reviewers

- Members of the Scientific Committee
- External reviewers
Conflicts of Interest

In order to minimize conflicts of interest, Reviewers should not:

- have **published** together with the Applicants in the past 3 years
- be engaged in **active collaborations** with the Applicants
- be **employees** of the Applicant’s institution
- have **close relatives** involved with the Applicant
- have/had longstanding **scientific or personal differences** with an Applicant
- be **professional associates** of the Applicants **(5-year limit)**

During the plenary review meeting, Reviewers with a conflict of interest with any Applicant/Application will leave the room during the relevant discussion
The Telethon General Grant Call Review Phases
Admission of Applications to the Review Process

- Immediately after the Call’s deadline, Applications are assessed by the Scientific Office for compliance with the Call’s criteria, including:
  - Administrative requirements
  - Applicant’s and Host Institution's eligibility
  - Eligibility of the disease/topic being addressed

- Applicants whose Application is excluded are notified soon afterwards

- Accepted Applications are distributed among the Research Program Managers

Second half of January

Beginning of February
Triage

- An initial screening (i.e. Triage) of accepted Applications is necessary to optimize the peer review process.

- All Applications are subject to the triage screening, irrespective of their past history (e.g. Revised Applications, Renewals).

- Each Application is assigned to 3 members of the Scientific Committee, who provide a triage score. Exclusion/inclusion criteria based on the scores are applied to determine the outcome of the triage step.

- Triaged Applicants are notified before the end of the peer review process.
Full Review

- Triage-approved Applications are re-distributed among members of the Scientific Committee (continuity with the Triage assignments is preserved where possible)

- Research Program Managers also assign two (or at least one) **External Reviewers** to each project

- Written comments by External Reviewers are directly forwarded to the relevant Scientific Committee Reviewers

- Based on the mean scientific scores provided by the Scientific Committee, the Telethon Scientific Office selects top-ranking projects to be discussed during the plenary review meeting

  - **Beginning / Mid of March**
  - **From March to end of May**
  - **Within the 1st week of June**
  - **Mid of June**
The Plenary Review Session

- **Chairman & Vice-Chairman**: conduct, moderate/steer
- **The 3 assigned Reviewers**: present and discuss the project
- **All Committee Members**:
  - participate in the discussion
  - score all discussed Applications (consensus vs. open statement of different positions is recorded)
- **Chief Scientific Officer** and **Research Program Managers**:
  - safeguard the coherence of the whole process
  - prepare the final ranking based on the overall scores
  - set the funding threshold (based on funds availability)

Third week in June
The ‘selection’ process at a glance

1. Call for application and examinations of projects
   - Telethon Research Program Managers

2. Evaluation of the projects
   - 3 independent members of the Scientific Committee
   - 3 independent members of the Scientific Committee + 2 external reviewers

3. Plenary review meeting
   - All 32 members of the Scientific Committee

4. Approval of funding
   - Telethon Board of Directors

Average 2013-2015:
- 100%
- 59%
- 30%
- 14%
Feedback to the Applicants the Review Report

- Prepared by the Research Program Managers

- Provides:
  - a clear outline of the whole selection process
  - a coherent explanation of the outcome for the Applicant’s project
  - integral anonymous written comments by Reviewers (both Committee Members and External Reviewers)

- Aims:
  - preserving transparency
  - providing helpful indications for re-submission
Evaluation Criteria:
The Evaluation Form
Reviewers of the Scientific Committee are asked to separately evaluate and score the following two aspects of each Application:

**Scientific Merit**

**QUESTION:** “Is the proposed research scientifically excellent?”

Evaluation parameters:
- **Significance** (ability of the project to improve health)
- **Originality of science and Innovation**
- ** Appropriateness of design and methods**
- **Preliminary results**
- **Feasibility/Safety**
- **Link to the disease**

**Impact on Patients**

**QUESTION:** “How close to therapeutic development or to any other potential impact on patients are the proposed studies?”

**Scoring range:** 1.0 (Significantly flawed) – 5.0 (Exceptional)

**Other evaluation criteria:**
- Comments on Applicant
- Comments on Budget Allocation
- Evaluation of the Previous Grant’s Scientific Report - for former grantees only
# Evaluation criteria

## Scoring range

<table>
<thead>
<tr>
<th>SCORE</th>
<th>VALUE</th>
<th>RECOMMENDATION</th>
</tr>
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<tbody>
<tr>
<td>4.5 - 5.0</td>
<td><strong>Exceptional</strong>, no concerns</td>
<td>Highest priority for funding</td>
</tr>
<tr>
<td>4.0 - 4.4</td>
<td><strong>Outstanding</strong>, no substantial points need discussion</td>
<td></td>
</tr>
<tr>
<td>3.5 - 3.9</td>
<td><strong>Excellent</strong>, only one or a few addressable points</td>
<td>Funding is recommended</td>
</tr>
<tr>
<td>3.0 - 3.4</td>
<td><strong>Good</strong>, several minor points in one or more Aims</td>
<td>Funding is deemed appropriate, if funds are available</td>
</tr>
<tr>
<td>2.0 - 2.9</td>
<td><strong>Average</strong>, major concerns in one or more Aims</td>
<td>Not Fundable</td>
</tr>
<tr>
<td>1.0 – 1.9</td>
<td><strong>Significantly flawed</strong>, multiple or fundamental problems</td>
<td></td>
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</table>
The 2016 Telethon Call for Research Proposals
Scientific content (1)

- **Relevance to Telethon:** state how the goals of your project fit with Telethon’s Mission
- **Focus on a single or a group of diseases of proven genetic origin**
- **Identify the chosen Disease(s) (OMIM, ICD-10 code and Orpha Number)**
- **Impact on Patients:** address how your proposal will advance progress towards therapeutic development, or will have any other potential impact on patients

**Telethon DOES NOT fund studies on:**

- Cancer
- Multiple sclerosis
- Acquired immunodeficiency
- Amyotrophic Lateral Sclerosis (ALS)
- Multifactorial diseases (identification of genetic risk factors e.g. SNPs or other predisposing variants)
Scientific Content (2)

Background, Rationale & Objectives

- Clearly and concisely **introduce the genetic disease(s)** involved in your proposal (Relevance & Impact on patients)
- Put the attention on **what is still missing** in the comprehension of the pathogenetic mechanism, identification of the disease, management, and therapy of the disease
- Stay on **one single story**, avoid to develop more stories because they are not conclusive
- Your **hypothesis** should be **provable** and **aims doable** with the **resources** you are requesting
- In the **rationale** put all the steps necessary to understand **what you want to achieve**
- **Do not propose too much**

Most common reasons cited by Reviewers for an Application's failure

- **Problem not important** enough
- **Not significant** to health-related research
- **Lack of original ideas**
- Study **not likely to produce useful information**
- Problem more **complex** than investigator appears to realize
- **Issue is scientifically premature**
- **Fishing expedition** lacking solid scientific basis (i.e. no basic scientific question being addressed)
- **Proposal driven by technology** (i.e. a method in search of a problem)
- **Rationale** for experiments **not provided** (why important / how relevant to the hypothesis)
- **Alternative hypotheses not considered**
You need **solid preliminary results**

Your results should sustain key points in your grant proposal suggesting that you may obtain results in all of your Aims

If you are starting from zero, ask for a pilot grant for one year. Not having preliminary data is, in general, considered highly risky

If your proposal is highly innovative, you'll need to make a very strong case for why you are challenging the existing paradigm and have data to support your innovative approach

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Most common reasons cited by Reviewers for an Application's failure

- Studies based on a shaky hypothesis or data
- Investigator too inexperienced with the proposed techniques
- Proposal lacking enough preliminary data or preliminary data do not support project's feasibility
- Not clear which data were obtained by the investigator and which reported by others
Scientific Content (4)

Research plan

- Begin each paragraph with a great lead sentence. Then elaborate on that
- Follow the same order presented in the background/rationale and preliminary results (makes the review easier), but don’t be redundant with the content
- Define one single story, go in details in each aim in order to achieve definitive result and answer to your questions
- Explain always the rationale of each sub-aim (experiment), what you expect to find, and what is your alternative approach if you fail to obtain a result
- Whenever possible suggest experiments that give rise to quantitative results, define the statistic analysis and power for significance
- Avoid/limit experiments too dependent on success of an initial proposed experiment

Most common reasons cited by Reviewers for an Application's failure

- Methods unsuited to the objective
- Relevant controls not included in the study design
- Proposed model system not appropriate to address the proposed questions
- Over-ambitious research plan with an unrealistically large amount of work
- Direction or sense of priority not clearly defined, i.e., the experiments do not follow from one another, and lack a clear starting or finishing point
- Experiments too dependent on success of an initial proposed experiment. Lack of alternative methods in case the primary approach does not work out
- Too little detail in the research plan to convince reviewers the investigator knows what he or she is doing (no recognition of potential problems and pitfalls)
- Insufficient consideration of statistical needs
If Next Generation Sequencing experiments are envisaged, the Applicant is asked to provide the following information:

- **Organism name** (e.g. Mus musculus, Homo sapiens...)
- **Estimated number of samples to be sequenced and/or the number of sequencing runs foreseen in the project**
- **Type of experiment** (i.e. type of sequencing approach, e.g. WES, WGS, Epigenome...)
- **NGS platform to be used** (e.g. Illumina, Ion Torrent...)

**High Performance Computing [HPC] bioinformatics resources at Cineca:**

Telethon’s partnership with Cineca offers the Applicant the possibility to exploit the HPC tools (as listed on the Cineca website: [http://www.hpc.cineca.it/content/hpc-science](http://www.hpc.cineca.it/content/hpc-science)) for the analysis of NGS data or to perform computer simulations of biological systems.

If the Applicant intends to take advantages of such services, he/she is asked to provide information as described in the Guidelines of the 2016 Call.
Personal data & CV

- **Knowledge and skills**
  
  The Reviewers use this part to see whether the PI is a leader in the field and has experience with the proposed techniques
  
  - Important to have **good records in the topic**, or at least **in the methods** you propose to use
  
  - List any experience in foreign laboratories

- **Independence**
  
  The CV should allow to determine also the independence of young investigators
  
  - **Papers** as First/Corresponding author
  
  - Other/previous grants
  
  - How large is your group?
  
  - Will you have the **authorship of the proposed study**?

State how this work will differentiate your own research from that of your former boss

Provide your **Personal author ID** (ORCID, ResearcherID, Scopus author ID)
Young Applicants

Scientific independence is also assessed by Reviewers: an Independence statement should be provided in case the Applicant is not the Chief of the Laboratory.

Applicants’ distribution by Age

- Female triaged
- Female full review
- Male triaged
- Male full review

Age of Telethon’ Grantees at award

Year of award: 2004 - 2015


Ages: 45.7, 47.9, 49.7, 49.5, 49.5, 49.9, 51.4, 48.9, 49.8, 52.4, 51.1
There is a pressing need to improve the ways in which the output of scientific research is evaluated by funding agencies, academic institutions, and other parties.

To address this issue, a group of editors and publishers of scholarly journals met during the Annual Meeting of The American Society for Cell Biology (ASCB) in San Francisco, CA, on December 16, 2012. The group developed a set of recommendations, referred to as the San Francisco Declaration on Research Assessment.

Outputs other than research articles will grow in importance in assessing research effectiveness in the future, but the peer-reviewed research paper will remain a central research output that informs research assessment. Our recommendations therefore focus primarily on practices relating to research articles published in peer-reviewed journals but can and should be extended by recognizing additional products, such as datasets, as important research outputs. These recommendations are aimed at funding agencies, academic institutions, journals, organizations that supply metrics, and individual researchers.'
Administrative forms

- **Personnel.** Be consistent between the amount of work proposed and the number of persons (Full Time Equivalent). Ask for a salary appropriate to cover a fellowship (*ask the Telethon grant office for support*).

- **Collaborations.** Indicate if you need to set up collaborations for key experiments in your grant proposal (identify people with recognized record in the field; request letter of collaboration detailing the topic of the interaction).

- **Budget.** Make a realistic, consistent budget, especially for consumables; indicate the role and name of the personnel for whom salary is requested (consistency with ‘Personnel’).

- **Other Financial Support.** Indicate if you are holder of other grants and those you have submitted; if related to the proposal, report possible areas of overlap or synergy with the current request.
Must not currently work in Italian Institutions

Avoid Reviewers with Conflicts of Interest

Choose highly qualified Scientists, with expertise in the subject of your proposal

In the Application form, under “Notes”, you can also indicate people you deem not appropriate to assess your Application (a motivation is required)
General considerations and suggestions
General considerations

- **Make life easier to Reviewers** - Peer review puts a big burden on Reviewers, so they truly appreciate an application that is **neat, well organized, and easy to read**.

- **Give the big picture** (think to your audience) and don’t drown reviewers in too many details.

- **State well the Rationale for each aim**: why do these experiments need to be done?

- **All 32 Reviewers of the review panel** - not only those who evaluated the Application - will likely read abstract, **Significance**, and **Specific aims** and will vote. Keep these parts simple and **don’t be too technical**. They all need to grasp your ideas and “fall in love” with your project!
If you are not funded ...

- Don’t get discouraged: You are not the only one!

- Listen to your Reviewers
  - Read the Telethon Review Report carefully. It is meant to provide you with suggestions to improve your grant application. Are the issues identified fixable?
  - If Reviewers did not understand your work, perhaps you did not make it clear and proved it to be feasible
  - You should learn from comments to re-write a more appealing grant the next year
  - Try to understand and solve all the pitfalls

- Seek advice
  - Trust your peers and ask for suggestions
  - Maybe you need collaborators with specific expertise, especially if your application is rejected more than one time

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Telethon General Grant Projects Success Rate

- **1st Time Submission**
  - 2011-2015: 14.6%
  - 2015: 11.6%
- **Revised & Resubmitted**
  - 2011-2015: 22.4%
  - 2015: 21.1%

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2011-2015 average success rate
Thank you for your attention!

Telethon Research Project – Call for Applications 2016

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Guidelines for preparing and submitting the Application online

http://www.telethon.it/node/6493

CONTACT US FOR SUPPORT AND/OR INQUIRIES

sooffice@telethon.it

BUON LAVORO!