

## TRANSLATIONAL TOOLBOX

# Funding Research Through the Online Partnership to Accelerate Research (OnPAR)



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### SUMMARY

OnPAR—the Online Partnership to Accelerate Research—seeks to provide a second opportunity for funding of high-quality, unfunded applications originally submitted to the National Institutes of Health and other national and international funding agencies. OnPAR will match applicable, unfunded applications with the research priorities of nongovernment organizations such as private biomedical foundations, pharmaceutical companies, venture capital funds, and other private funds. Funding organization members will review and make final funding decisions through a simple, 2-step process whereby applicants can submit public abstracts directly to OnPAR. If a member requests additional information, then, *by invitation only*, an applicant can submit their original unfunded application and their peer review summary statement. Advancing research discovery and drug development to improve clinical outcomes for patients afflicted with or at risk for disease is the primary goal of OnPAR. OnPAR invites the scientific community to fully participate in this new funding paradigm by submitting their National Institutes of Health public abstracts so that funding members can review and potentially support these high-quality, unfunded applications. (J Am Coll Cardiol Basic Trans Science 2016;1:536–40)  
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Each year, hundreds of innovative, high-scoring research applications are left unfunded. Currently, global funding agencies fund <25% of the research applications they receive. In 2015, the National Institutes of Health (NIH), the largest source of funding for medical research in the world, reviewed 69,973 applications and funded 14,457, for an average funding rate of 20.7% (1). The funding rates vary significantly, depending on the disease area (2). The top NIH institutes, in terms of applications received, funded between 13% and 29.6% of applications (Table 1). As shown in Table 1, the overall funding rate for National Heart, Lung, and Blood Institute was 21.9%; however, the funding rate for Research Project Grants (R01) was only 13.0% (3). This leaves many outstanding cardiovascular research projects unfunded. These

unfunded projects now have a second opportunity for funding through the Online Partnership to Accelerate Research (OnPAR), which will be described in the following text.

The primary goal of OnPAR is to connect funders with unfunded research applications. OnPAR, which launched officially in March 2016 (4,5), seeks to match quality biomedical research applications with the priority areas of interest of private foundations, pharmaceutical and biotech companies, and/or other private biomedical research funders.

Government, private foundations, family foundations, pharmaceutical companies, venture capital funds, and other funds for biomedical research are part of a funding ecosystem that supports global biomedical research. Their goal is to support

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research and drug development for the advancement of public health. Over the last decade, these organizations have begun working together to build on their complementary strengths. OnPAR is a new funding paradigm that seeks to build public-private partnerships within the funding ecosystem.

**HOW DOES OnPAR WORK?**

OnPAR will rely on 3 pillars that support the entire research enterprise: applicants, members, and partners (Figure 1).

*Applicants* will submit their abstracts and application material for consideration by members. *Members* will consider those applications for funding. *Partners* will inform high-scoring, unfunded applicants about OnPAR after applications are peer-reviewed and final funding decisions are made.

**APPLICANTS**

Applicants represent the key to unlocking the success of the OnPAR public-private partnership. OnPAR will succeed as long as applicants submit their abstracts and application materials for review to further accelerate research discovery and development.

The benefit for applicants is simple. Researchers can spend months generating preliminary data and preparing the necessary documents (including a robust research strategy, detailed budget, and other requirements) for their proposal. Even if this proposal is well conceived, it may not be selected for funding (6). Application success rates vary by disease area, as stated previously, as well as by type of application (Table 2).

For applicants across all grant mechanisms, there is no cost to submit application materials to OnPAR. It should take no more than 5 to 10 min to register and enter a public abstract.

The abstract submission is a simple 2-step process:

1. *Registration*: the applicant enters basic information to register for OnPAR access.
2. *Abstract submission*: the applicant submits the same “public” abstract that was submitted with the NIH application.

After the abstract is submitted, it is “matched,” if applicable, with the research priority areas of OnPAR members. At their own discretion, each member may request additional information if interested in reviewing the application.

If a member requests additional information, then, by invitation only, OnPAR will ask for a:

1. *Full application*: this should be the exact same application that was submitted to NIH.

2. *Summary statement*: this is the peer review evaluation received for the application.
3. *Confidentiality/nondisclosure agreement*: OnPAR will execute a confidentiality or nondisclosure agreement that will protect the applicant’s intellectual property. Applicants will know who is interested in reviewing their application.

**WHO IS ELIGIBLE?.** All applicants that have submitted NIH applications in 2015 and 2016 may submit their unfunded applications to OnPAR right now. Applicants that scored within the 30th percentile for all NIH regular submissions, 50th percentile for all rare diseases, or were highly scored (for those that are not ranked) are eligible to submit their abstracts to OnPAR. See details about eligibility on the OnPAR web site (4).

Eventually, OnPAR hopes to accept application materials from other national and international funding agencies, and discussions are in progress. The OnPAR website has recently been upgraded to facilitate submission from all funding agencies, and all abstracts must be submitted in English.

**SHOULD I SUBMIT AN APPLICATION NOW EVEN IF I DO NOT SEE A MEMBER THAT MATCHES MY SPECIFIC RESEARCH AREA?**

Yes. OnPAR will be adding new members in the coming weeks and months. The more abstracts OnPAR receives in any research topic, the greater the incentive for a research member to join the partnership. Submission to OnPAR does not preclude reapplying to NIH. There are no limitations on disease or topic area; abstracts in any disease area will be accepted. Examples include cancers, cardiovascular-related diseases, Alzheimer’s disease, Parkinson’s disease, diabetes,

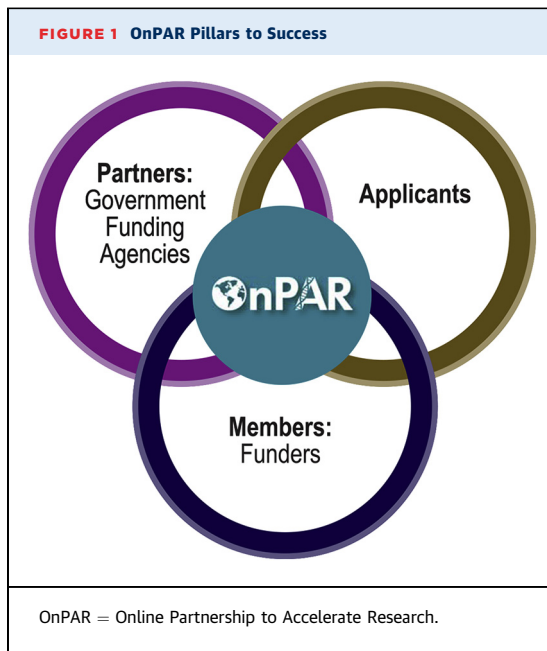
**ABBREVIATIONS AND ACRONYMS**

- ALS** = amyotrophic lateral sclerosis
- CDA** = Confidential Disclosure Agreement
- COPD** = chronic obstructive pulmonary disease
- HIV/AIDS** = human immunodeficiency virus/ acquired immune deficiency syndrome
- NCI** = National Cancer Institute
- NHLBI** = National Heart, Lung, and Blood Institute
- NIAID** = National Institute of Allergy and Infectious Disease
- NIGMS** = National Institute of General Medicine Sciences
- NIH** = National Institutes of Health
- NINDS** = National Institute of Neurological Disorders and Stroke
- OnPAR** = Online Partnership to Accelerate Research
- TB** = tuberculosis

**TABLE 1 2015 Funding Statistics for the Top 5 NIH Institutes**

NIH Institute	Number of Applications Reviewed	Number of Applications Awarded	Number of Unfunded Applications	Award Amount	Success Rate	Unfunded Rate
NCI	9,513	1,236	8,277	\$508,125,718	13.0%	87.0%
NIAID	5,932	1,272	4,660	\$577,320,121	21.4%	78.6%
NHLBI	4,233	928	3,305	\$497,923,174	21.9%	78.1%
NINDS	3,992	819	3,173	\$310,868,609	20.5%	79.5%
NIGMS	3,626	1,074	2,552	\$404,894,040	29.6%	70.4%
<b>Total</b>	<b>27,296</b>	<b>5,329</b>	<b>21,967</b>	<b>\$2,299,131,662</b>		

Data from the National Institutes of Health (2).  
 NCI = National Cancer Institute; NHLBI = National Heart, Lung, and Blood Institute; NIAID = National Institute of Allergy and Infectious Disease; NIGMS = National Institute of General Medicine Sciences; NIH = National Institutes of Health; NINDS = National Institute of Neurological Disorders and Stroke.



epilepsy, dementia, alopecia areata, malaria, tuberculosis, human immunodeficiency virus/acquired immune deficiency syndrome, chronic obstructive pulmonary disease, celiac disease, lupus, arthritis, multiple sclerosis, cystic fibrosis, muscular dystrophy, and amyotrophic lateral sclerosis; as well as rare diseases such as Duchenne muscular dystrophy, progressive supranuclear palsy, epidermolysis bullosa, Friedreich's ataxia, cystinosis, Niemann-Pick type C1 disease, and all those included in the National Organization for Rare Disorders member list (7).

OnPAR is free for applicants, and abstract and application materials are simple to submit. OnPAR offers a second opportunity to receive funding without rewriting a completely new application. Although applicants may not receive full funding of their research efforts, they may receive a small bridge award. The member funding strategies are described in the following text.

**TABLE 2 Example of 2015 NIH Success Rates by Select Grant Mechanisms**

Mechanism	Activity	Success Rate	Unfunded Rate
Research grants	All (in aggregate)	18.3%	81.7%
Small business innovative research grants	All (in aggregate)	18.1%	81.9%
Small business technology transfer grants	All (in aggregate)	18.0%	82.0%
Training grants	All (in aggregate)	28.9%	71.1%

Data from the National Institutes of Health (NIH) (<https://report.nih.gov/fundingfacts/fundingfacts.aspx>).

## MEMBERS

Members are the second pillar of OnPAR, and they are ready to open the door of opportunity to many exceptional, but unfunded, research projects.

OnPAR is relying on its members to fund these high-quality, unfunded research applications. Members might be private biomedical foundations or charities, pharmaceutical companies, venture capital funds, or other nongovernment private funds. Members will fund applications that best fit their mission and research priority areas. Some members will fund through OnPAR in addition to their own funding mechanisms. Others might eventually consider funding through OnPAR only, thereby reducing their investment in peer review and other administrative activities.

Current OnPAR members can be found on the OnPAR web site (4). Leidos will be announcing new members over the next few months.

Members might fund unfunded applications at different levels, depending on their needs. Funding strategies include:

- *Fully funding an application:* if there is a gap in the member portfolio and it meets their research priority areas.
- *Partially funding an application:* if 1 or more of the aims of the application address a gap in their portfolio.
- *Bridge funding:* if the work is an innovative or ongoing project that could benefit from a few more experiments before resubmitting to the NIH.

All members will follow their own guidelines for funding, and awards will be made through a grant or contract mechanism.

- *Grants* are more likely if applications involve work in early discovery or translational research. Such efforts might be funded by a private foundation or charity member, although pharmaceutical companies might also provide grants.
- *Contracts* are more likely to be used by a pharmaceutical or venture capital fund where royalties or a licensing agreement might be possible. Private foundations sometimes fund contracts as well.

Members review abstracts and request full application materials for applicants that meet their research priority areas and address gaps in their portfolio. There is no minimum requirement for any member to fund any number of applications. However, all members have expressed interest and see OnPAR as a catalyst to accelerate research, find cures, and develop treatments.

## PARTNERS

Partners are the third pillar of the new OnPAR funding paradigm. They provide the infrastructure for OnPAR to obtain fully peer-reviewed research applications.

Due to the proprietary nature of the materials, partners are prohibited from sharing unfunded applications with OnPAR. However, partners can inform applicants about this new funding paradigm so that the scientific community can submit their applications directly to OnPAR. Details on how to submit application materials can be found on the OnPAR web site (4).

Currently, OnPAR works only with the NIH, its funding partner, and the agency plays a critical role in OnPAR. The NIH, a part of the U.S. Department of Health and Human Services, is the nation's medical research agency, and makes important discoveries that improve health and save lives. The NIH is the largest source of funding for medical research in the world, and its mission is to seek fundamental knowledge about the nature and behavior of living systems and the application of that knowledge to enhance health, lengthen life, and reduce illness and disability.

Leidos works closely with the NIH Office of Extramural Programs to ensure that all NIH Program Officers are up to date about OnPAR. The NIH Office of Extramural Programs provides leadership and expertise in science program management, including program and policy development, interpretation, coordination, oversight, evaluation, training, and outreach, for the extramural research community and NIH extramural staff. Such efforts promote and sustain the capability of the highest-quality research and training programs to improve public health.

The NIH Program Officers' role is to inform eligible research applicants about OnPAR. Soon after advisory councils meet and final funding decisions are made (the NIH standard dates are available online [8]), Program Officers inform high-scoring applicants about OnPAR.

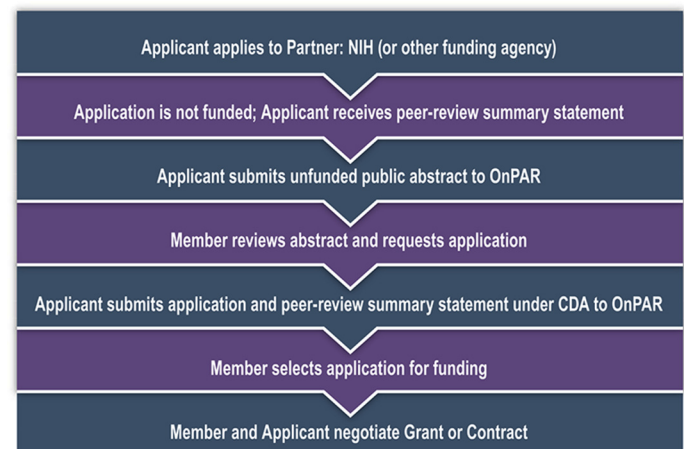
As the third pillar of OnPAR, the NIH and all future partners are essential to its success. Partners prepare and announce research programs, train applicants and reviewers on the submission and review of research applications, and make final funding decisions. Their goal is to support research discovery and development for the advancement of public health. However, they cannot fund all worthy research projects; subsequently, research advancement may be hindered. OnPAR was created to fill the gap in funding and, in doing so, accelerate research discovery and development.

New partners will be joining soon, expanding OnPAR at the national and international level and providing a second funding opportunity for quality unfunded applications.

OnPAR will be successful with the support of its 3 pillars: applicants, members, and partners. Each pillar plays a critical role in the research enterprise to accelerate discoveries that affect public health. The process from submission to NIH to potential funding by an OnPAR member is shown in Figure 2. The OnPAR funding process might take 3 to 6 months, depending on each member. As members get more comfortable with this new funding process, the funding cycle may narrow.

Biomedical research is the nexus of the research enterprise that comprises the academic and patient community, industry, foundation, private funders, and government. As the editors of *JACC: Basic to Translational Science* stated in the inaugural issue of this journal, "translational science exemplifies 'big science' because it requires effective cooperation between basic and clinical investigators in academia and industry, patients and their families, patient advocacy groups, and governmental funding and regulatory agencies to evaluate and develop new therapies. No one person can possibly acquire all the requisite skills needed to conduct this type of research, and no one individual can move their ideas forward in the cardiovascular [or any other

**FIGURE 2** OnPAR Process: From NIH Submission to Potential Funding by an OnPAR Member



CDA = confidential disclosure agreement; NIH = National Institutes of Health; OnPAR = Online Partnership to Accelerate Research.

disease] space unaided” (9). OnPAR seeks to become a funding platform, a forum, and a learning center for multidisciplinary, multistakeholder collaboration to advance research discovery and drug development. OnPAR will seek to fund all types of research, from early discovery and basic research through translational and clinical research. Please join us in making OnPAR a successful new research-funding paradigm

to advance research and find cures and treatments for the many diseases affecting our communities, including cardiovascular disease.

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**KEY WORDS** funding, grants, research