American Heart Association | American Stroke Association

life is why

GRANT WRITING TIPS

TABLE OF CONTENTS

GRANT WRITING TIPS

Introduction

The objective of these tips is to assist both beginning and established investigators in optimizing their chances of successfully competing in a peer-reviewed research application competition.

Remember: This is a competition. With success rates falling to 1 out of 4, or below, the difference between success and failure often results not just from the quality of the science, but from the quality of the application.

The quality of science of the applications that fall in the 10% below the cut-off line for funding is often not significantly different from those in the 10% just above the cut-off. "Grantsmanship" can make the difference.

Strong grantsmanship does not guarantee that mediocre science will turn into a fundable grant proposal. However, poor grantsmanship often turns very good science into an unfundable proposal.

Before You Begin Your Proposal

- Review the AHA Program Descriptions, paying particular attention to the target audience and restrictions. http://my.americanheart.org/professional/Research/FundingOpportunities/Funding-Opportunities_UCM_316909_SubHomePage.jsp
- Make sure that your proposal is aligned with the AHA's mission to build healthier lives, free of cardiovascular diseases and stroke. It is incumbent upon the applicant to make a clear link between the project and the mission of the AHA. The application's lay summary will be assessed in terms of potential impact on the AHA mission; this will be factored into the overall priority score as noted in the peer review criteria.
- AHA supports research broadly related to cardiovascular function and disease and stroke, and to related clinical, behavioral, basic science, bioengineering or biotechnology, and public health problems.
- Find colleagues who have served on an AHA study section or have received AHA funding. They can give you "insider" information on how the agency works, and what "sells." **(NOTE: If your colleague is a current AHA reviewer, s/he might not be able to help you because it would be a conflict of interest.)** Rosters of current reviewers are posted on the AHA web site at http://my.americanheart.org/professional/Research/PeerReview/Committees/Fall-2013-Peer-Review-Committees_UCM_423732_Article.jsp

Formulate / Clarify Your Ideas

AHA program descriptions include the peer review criteria against which your proposal will be evaluated. Be sure to address the criteria in your application.
You may review the peer review criteria in the description of the program to which you are applying: http://my.americanheart.org/professional/Research/FundingOpportunities/Funding-Opportunities_UCM_316909_SubHomePage.jsp

- Do you have a clear, concise, and testable hypothesis?

- Are your objectives and aims focused?
- What questions are to be addressed?
- Can you define and design specific experiments that will directly test your hypothesis?
- Do not wait until the last minute to formulate your ideas. Start the process early.
- Consider writing up your recent work and submit it to appropriate peer-reviewed journal(s). Do this well in advance so that the work can appear in your biosketch as "published," "in press" or "a submitted manuscript." Your record of accomplishment, as judged by publications, is an important criterion in the assessment.
- Carry out appropriate preliminary (pilot) studies, so that these results can be included in the application. This is especially important for new applications because it helps clarify whether the experimental approaches are feasible and where the pitfalls may be.
- Find and study previous grant proposals of colleagues who have been successful. Consider these as models. Seek out proposals that ranked in the top 10-15%.
- If you don't have expertise in a technique, identify essential and appropriate investigators who wish to collaborate or consult with you.
- Discuss ideas with colleagues in the same and relevant fields. Just going through the process of explanation and discussion helps to clarify and focus your ideas, and to identify possible gaps in logic.

PREPARING THE APPLICATION SECTIONS

General Information

- Since your Grants Officer must submit your application to the AHA, familiarize yourself with your institution's internal deadline to submit to your GO.
- Begin early – do not wait until your Grant Officer's deadline is near to start working on your application.
- Follow AHA's instructions for appropriate type size, font, spacing, pagination, and page margins.
- Review your document uploads to confirm you uploaded the correct document.
- Grants@Heart will not permit you to submit a proposal that exceeds the maximum number of pages allowed.
- Once submitted to AHA, no changes or additions can be made to an application.
- Polish your application extensively. Make the application well focused, clear, well organized, attractive and accurate.
- Be consistent with terms, references, and form writing style.
- Proofread carefully by reading your proposal aloud. Do not rely on computer "spell check" and "grammar check" to point out mistakes. When in doubt, use a dictionary. Adding a misspelled word to your spell check dictionary can cause recurring misspellings. If you can't get the spelling and/or the grammar right, how are you expected to get the research right?
- Use basic English. Avoid abbreviations, acronyms, and jargon that the non-expert may not understand. If you use abbreviations, define them when used for the first time.
- Include only those graphs, tables, etc., that are essential to the narrative. These should complement the text and be appropriately inserted.
- Extensive and intensive internal peer review of your proposal is essential. Have an outside reader review your proposal for clarity and consistency.
- Well in advance of the submission deadline, ensure that an early draft of your proposal is examined by at least two or three colleagues who have experience with, and are

successful in, the peer review process. Ask someone in your direct scientific area check relevance, accuracy, ambiguities and quality of the science. Have a "generalist" check for clarity and have someone who is a good editor check your work.

- Make sure that the version they receive is free of mechanical errors (spelling, typos, grammar, etc.). It is not their task to make these kinds of corrections. If they are distracted by mechanical errors, they may fail to identify fundamental problems.
- Give your internal reviewers enough time to do a thorough job. Do not insult them by giving them a 24-hour deadline.
- Sometimes, applications are assigned to a multidisciplinary team of reviewers. You may be writing for a reviewer in a related field, rather than for an expert directly in your area. Aim the application at both the expert in the field and at the generalist.
- Understand your reviewers:
  - Make reviewers enthusiastic advocates for your application. A lukewarm review can be fatal.
  - Reviewer's participation in the review and evaluation of applications is above and beyond their regular job responsibilities. The AHA does not compensate reviewers for their time.
  - Reviewers often do their reading in bits-and-pieces. Have your application organized so that it can be read in this way. You do not want them to have to go back to the beginning after each break.

Project Title

- The title of your project is important. It sets the first impression. Along with the Abstract, it is used to route your application to the appropriate reviewers.
- Your title should be descriptive, specific, appropriate, and should reflect the importance of the proposal. However, it should not be so specific as to require changes with each renewal or resubmission -- renewals must maintain the same title.
- Ensure that your title stays within the allowable 120 alpha-numeric characters, including spaces. Do not use special characters, including question marks, in the title.
- If your title is too long, it may be truncated to the allowable length so that it can appear electronically. This could inadvertently change the meaning of your title.

Abstract / Summary of Proposal

The abstract should serve as a succinct and accurate description of the proposal, even when it is separated from the application. It must stand on its own.

- Take this section seriously. Consider writing it last. Work on it extensively after the bulk of the proposal has been fine-tuned. It is the first part that is read, and this sets the first impression.
- The abstract will be read by reviewers when they are indicating their preference/expertise to review applications. This is part of the process by which applications are assigned to reviewers.
- It must be understood by experts in your field and by "generalists."
- The primary and secondary reviewers read the entire application for which they are responsible, but others on the review committee **may only read the abstract**. The abstract may be the only part of the application that is read by all the members of the grants committee who are not primary reviewers, even though ALL members will be asked to give their independent scores (given equal weight to the scores of the primary and secondary reviewers).

- Review committee members study the application and prepare written comments before the meetings. They quickly review all the abstracts just before the meetings to recall the essentials.
- The abstract should include: hypotheses (if applicable), specific aims / objectives, approaches, research plan, and significance.
- Describe how the proposal is directly related to AHA's mission and objectives.
- Describe concisely the research design and methods.
- Explain why the proposal is unique, important, significant, and worth supporting.
- Stay within the allotted space for the abstract. It is not necessary to fill this space. When you have nothing more to say, stop.

RESEARCH PLAN

General Information

- For page limitations and suggested length of each section, visit http://my.americanheart.org/professional/Research/FundingOpportunities/SupportingInformation/Research-Plan_UCM_321405_Article.jsp
- Your proposal must be focused, original, novel, innovative, and of course feasible.
- Try to find a balance between something "sure" and something new, innovative and/or risky.
- Describe alternative strategies in case the original ideas fail.
- Write and rewrite: work and rework the application.
- Use of diagrams and figures is often helpful (a picture is worth a thousand words).
- Never state or imply that a study will be carried out "because it has never been done" or "there are no data on …." This may be so because the concept is trivial.
- State clearly what is novel, and what is merely confirmatory.
- State explicitly how the proposal has relevance to CVD and/or stroke.
- It may be useful to organize the presentation of your research plan with appropriate headings and sub-headings, using a simple and obvious numerical classification. Be careful about too much white space, as you are working within a page limitation.
- Cite your sources. Cite all information taken from another researcher or publication. Failure to do so may result in withdrawal due to plagiarism.

Specific Aims

- The Specific Aims are the specific projects, studies, and items that will be undertaken in order to fulfill the long-term objectives.
- Put them in a logical and sequential order. Indicate priorities.
- Provide a clear, concise summary of the aims of the work proposed and its relationship to your long-term goals.
- State the hypothesis or hypotheses to be tested.

Background: Current State of Knowledge

- Sketch the background leading to this application. Summarize important results outlined by others in the same field, critically evaluating existing knowledge.
- Identify gaps that this project is intended to fill.
- The information should answer three questions: what is known, what is not known, and why is it essential to find out.
- Begin with a brief outline of the highlights in the background review. State where your own previous contributions (if any) fit in.

- Critically evaluate the relevant literature: not just an uncritical compendium or list. Make sure all citations are complete: title, authors, book or journal, volume number, inclusive pages, year of publication.
- Discuss all sides of a controversy, disagreement, and/or discrepancy in published results fairly. However, be careful since a participant in a controversy may be your reviewer.
- Specifically identify the gaps and contradictions that you will clarify. Carry this into the rationale for your proposal.
- Emphasize the importance and relevance of your proposal in bridging your hypotheses and long-term objectives to the background review.
- Integrate your previous findings within the background to give the reviewers a sense of your relevant contributions.
- Describe preliminary data that are relevant and pertinent. Show the actual data. Tie these directly to your hypotheses and long-term objectives. This is especially important in a new application in order to document the credibility, experience, and competence of both the proposal and the applicant.

Significance and Cardiovascular Relevance

- State concisely the importance of the proposed research and discuss its health relevance, including relevance to cardiovascular function and disease, stroke, or to related fundamental problems.
- Describe the relevance of the proposed research to the cardiovascular area or stroke.
- Failure to establish cardiovascular relevance can result in disapproval of the application.

Preliminary Research of Principal Investigator

- Concisely describe your previous work related to the proposed research to establish your experience, competence, and credibility to pursue the proposed project.
- Include pilot studies showing the work is feasible, if applicable. Present the actual data. This will help establish your experience, competence, and credibility.

Methods of Proposed Research

- Describe how you propose to fulfill the Specific Aims.
- Explicitly describe the proposed experiments, methods, or procedures.
- Provide sufficient detail and definition to allow adequate evaluation of the approach to the problem.
- Describe any new methodology and its advantage over existing methodologies. Explain why they are better than existing methods.
- Describe the overall study design, including a power analysis for justification of the number of subjects to be used in the study and control populations. Distinguish clearly between overall research design and specific methods.
- Explain the processes for data collection, analysis, and interpretation. Describe in detail the statistical analysis that will be used for the data interpretation, including a discussion of the adequacy of controls, evaluation of assumptions, and method of establishing statistical significance.
- Include details of any collaborative arrangements that have been made.
- Be focused and clear. Put the Aims in a logical and sequential order. Consider a brief opening paragraph describing the relationship of each Specific Aim to each other and to the overall Objectives. It is useful to break this section down, beginning with each stated Specific Aim (consider a one-sentence rationale for each aim). Then outline the methods to

accomplish each Specific Aim, and explain why the proposed approach was chosen. Make a convincing case for why the project should be funded and that the research can be done.

- Consider a plan something like this:
  - Number the research designs and methods to correspond to the numbers of the Specific Aims.
  - Use sub-numbering within each part when describing several methods applicable to the same Specific Aim.
  - Do not repeat identical procedures that apply to more than one Specific Aim.
  - Reference, but do not describe, well-known or standard procedures. However, do describe procedures that are new or unlikely to be known to reviewers.
  - Discuss relevant control experiments.
  - Provide a brief tentative sequence and timetable for the project. List them in order. Be realistic. Consider doing this using a diagram or table. Clearly define priorities.
  - Document all proposed collaborative arrangements, including letters from collaborators confirming the specifics of the arrangement. The role of collaborator(s) should be clearly defined. Biographic sketches of collaborators are useful. Otherwise, relevant experience and expertise should be included in the collaborator's letter.

Experimental Problems

- Discuss potential difficulties and limitations of the proposed procedures and give alternative procedures to achieve the aims. This will prevent potential criticisms by reviewers and may, in fact, "save" your application.
- State clearly possible weaknesses and/or ambiguities and explain why you have included them (i.e. preempt the criticisms).

Ethical Aspects of Proposed Research

- If the research involves human subjects, biohazards, or animals, explain the decision governing these choices.
- Describe any special consideration you have given to all ethical issues involved in your proposed investigation (biohazards, human or animal subjects), identifying risks and management.
- Discuss the nature of the informed consent that will be obtained if the research involves human subjects. If the proposed project involves no ethical questions, indicate such.
- If a proposed research project involves human subjects, the population sampled should be inclusive of the general population, of relevance to the scientific question posed, without restriction concerning gender, race, age, and socioeconomic status. Proposals that intentionally restrict the population sampled must include a compelling scientific rationale for such research design. Be sure to address this topic.

LITERATURE CITED – REFERENCES

- Cite all information taken from another researchers or publications. Failure to do so may result in withdrawal due to plagiarism.
- List publications, manuscripts, abstracts and other material referenced in your proposal -- submitted or accepted. There is no page limit for the Literature Cited section.

BIOGRAPHICAL SKETCH/BIBLIOGRAPHY

- Your record of accomplishment, as judged by publications, is an important criterion in the assessment of the investigator.

- Aim for a good number of first authored publications in first-order peer-reviewed journals.
- Reviewers check various key websites to see up to date publishing information. If you happen to get something published after the application submission, the reviewers might check to find out if the publication has been accepted.
- Other kinds of publications (books, chapters, reviews, non-peer reviewed articles) may not impress reviewers.

BUDGET JUSTIFICATION

- Fellows do not provide a budget as the award is mostly stipend.
- Grants need only provide a skeleton budget, but should include information in the Budget Justification page, for personnel, equipment, travel, etc.
- Make sure the items you are justifying are realistic and appropriate for your project. Give sufficient details for each item so the reviewers know it is reasonable.
- Check carefully what AHA supports. Do not request items that are not allowed.
- For equipment, document convincingly why the piece is essential (not just "nice to have" or "faster and better"), and why the specified model is required.
- For personnel:
  - Make sure they are allowed.
  - Specify the unique and essential role that each will play, and state how their qualifications are matched with the role.
  - Avoid "to be named" if possible.
- Indirect Costs are a percentage of costs allowed by the funding institution. AHA grant awards typically offer 10%; be sure to check program descriptions for specific allowances.

PUBLICATIONS/ABSTRACTS

- Publications should be relevant to the area you are researching. If this is not possible, i.e. you have recently changed your science focus, submit representative publications.
- If you don't have publications, state that in the application.

RESUBMISSION MODIFICATIONS

- When submitting a revised application, answer all reviewer concerns mentioned in the earlier review comments. Changes you make in the revised application must be described and illustrated.
- The AHA allows applicants to submit an original plus a maximum of two resubmissions. If you have submitted the maximum number of applications of the same project (3), you must develop a new proposal.
- Regardless of how you feel about a reviewer's comments, do not insult the reviewers or respond with sarcasm. If you differ in your opinion, try to courteously convince the reviewers of your point of view.
- In addition to responding to specific reviewer concerns, review all other aspects of the application to determine whether updating or improvement is needed or possible. Just because it was not criticized before is no guarantee it will not be criticized in the review of the revised application and new round of competing applications.
- Avoid over-editing your revised proposal. When possible, the same reviewers who evaluated the first submission will review the second and third submissions. This does not happen 100% of the time, though. This is because: 1) your previous reviewers rotated off the committee or transferred to a different committee, or 2) your application was moved to

another committee because a conflict of interest was identified between your application and the previous reviewers' committee.
- Just changing the name or attempting to submit an old project as a new one may result in a downgrade of your proposal.

Make sure that all required documents are included and that the correct document has been uploaded. Applicants are only allowed to upload the documents required for the program. Additional materials are not allowed. Internet web site addresses (URLs) may not be used to provide additional information for reviewers. Reviewers are under no obligation to view the internet sites. Moreover, the reviewers are cautioned that they should not directly access an internet site, as it could compromise their anonymity.

A WORD TO FELLOWSHIP APPLICANTS

Career Goals

- Be clear about your long-range professional, research and academic career goals. This refers to your career, not your proposed fellowship tenure.
- Describe the organization (e.g., academic, government, commercial) in which employment is planned, as well as the type of work (e.g., research, including area, teaching) to be pursued.
- Fellowships are intended to support individuals who are sincerely interested in pursuing a career in cardiovascular or stroke research. Therefore, you must describe the relationship between your career goals and the cardiovascular disease or stroke research. Failure to do so will result in the downgrading and/or disqualification of the application.

Training Goals

- Describe the training goals under this fellowship and their relevance to your career goals.
- Identify skills, theories, and conceptual approaches that you hope to learn or enhance your understanding of during the period of award.
- Describe how the proposed activities, including the proposed research, will contribute to the achievement of this learning.
- Describe how these activities will prepare you for a career in cardiovascular or stroke research.

Your sponsor must provide documentation on the following items in the documents they prepare for your proposal:

Respective Contributions

- Specify the respective contributions to the development of the research plan presented in this application.
- Specify the following:
    - Who wrote the research proposal?
    - Is it part of a larger, ongoing project of the sponsor?
    - The AHA expects the research plan to be prepared by the trainee, with appropriate guidance from the sponsor.

Research Environment

- It is incumbent upon the applicant and the sponsor to ensure that the discussion of the available facilities and major equipment is relevant to the proposed affiliate application.
- Make sure the resources and environment section addresses all requirements of the proposed research plan.
- Justify any reliance on resources external to the research.
- Make sure that proposed research personnel have the capability to perform the tasks assigned to them.

Selecting Referents

- Select individuals familiar with your scientific interests and abilities.
- Contact them when you begin your application to make sure they are willing to provide a letter of support and can do so by the required deadline.
- Make sure they understand that the wording or phrasing of these letters is important.
- Letters should clearly state that the applicant is not just an extra "pair of hands," but has adequate resources to grow in a research environment.

FATAL FLAWS
A Look at Common Errors

Administrative Errors

- There is little sympathy in the research world for a proposal sent late. **You** are ultimately responsible for making sure that your application is completed and submitted to your grants officer, according to his/her schedule.
- If you entrust the submission of your completed application to an administrative assistant or co-worker, you should review and follow the status of your application to confirm it was submitted to your grants officer. You should also follow the status of your application to confirm that your grants officer completes the submission of it to the AHA.
- Applications not completed according to AHA's format requirements will not be accepted. That means characters per inch, lines per page, correct font, number of pages, etc. AHA staff is well trained to spot format inconsistencies.
- Word documents converted to Adobe Acrobat PDF files often mysteriously reformat themselves to an inappropriate number of pages. Convert your documents to Adobe well before the submission deadline and check that it converted correctly.

Problems with research plan

- The proposal is fragmented and disjointed; copy and paste from different proposals.
- Not all information taken from another researchers or publications were cited. Failure to do so may result in withdrawal due to plagiarism.

Problems with significance

- Not significant nor exciting nor new research nor innovative
- Lack of compelling rationale
- Incremental and low impact research
- Innovation is not always necessary, but the results should have compelling significance

- Link between the project and the mission of the AHA is not compelling

Problems with specific aims

- Too ambitious, too much work proposed
- Unfocused aims, unclear goals
- Limited aims and uncertain future directions
- The amount of work doesn't fit the project budget

Problems with experimental approach

- Too much unnecessary experimental detail
- Not enough detail on approaches, especially untested ones
- Not enough preliminary data to establish feasibility
- Feasibility of each aim not shown
- Little or no expertise with approach
- Lack of appropriate controls
- Not directly testing hypothesis
- Correlative or descriptive data
- Experiments not directed towards mechanisms
- No discussion of alternative models or hypotheses
- No discussion of potential pitfalls
- No discussion of interpretation of data

Problems with investigator

- No demonstration of expertise or publications in approaches
- Low productivity, few recent papers
- No collaborators recruited or no letters from collaborators if they are needed. Adding collaborators where none are needed could create questions as to why they are included.
- Inadequate percent effort

Problems with environment

- Little demonstration of institutional support
- Little or no start up package or necessary equipment

Problems with lay summary

- Failure to clearly state potential impact on mission
- Failure to use language that can be understood by a non-scientist

THE REVIEW PROCESS
AHA's Screening and Review Process

Study section members evaluate applications using the peer review criteria listed in each program description. Be sure to address each criterion in your proposal.

Your proposal will be sorted to a study section that corresponds with the major science classifications that you assign to your submission. AHA review panels consist of scientific expert reviewers familiar with the science of the application and may also include lay reviewers. Lay reviewers are individuals without formal training as a scientist who have a strong interest in the prevention and/or management of heart disease and stroke.

The reviewers screen the applications that sorted to their sections by reading the title and abstract. They mark their preferences to review each application (qualified to review / will review if asked / not qualified to review). Applications that receive few preferences to review may be moved to a more scientifically-appropriate study section.

Applications are then assigned to scientific reviewers; two reviewers and one reader. The primary and secondary scientific reviewers are asked to submit extensive written comments. Applications may also be assigned to lay reviewers who will specifically help to evaluate the potential impact of research applications to the mission of the AHA through their scoring (evaluation) of the lay summary portion of an application. Lay reviewers are asked to provide brief written comments about the application's potential impact to the AHA mission. They may also add summary comments on the overall application if desired. All comments will be made available to the other members of the review committee. Review Comments include:

- A concise summary of the proposal (no more than a single paragraph) emphasizing the significance of the proposed research.
- An evaluation of the work done previously as presented in a progress report (if applicable).
- An assessment of the strengths and weaknesses of the proposal, including an opinion regarding:
  - originality of the work or hypothesis presented and the significance of the questions asked
  - feasibility
  - relationship to the previous work done by the applicant
  - appropriateness of the critical review of the literature
  - scientific and intellectual environment
  - applicant's knowledge of the field as reflected in the literature reviewed
  - appropriateness of the research plan and methodology
  - significance of the work conducted previously and the potential of the proposed work to elucidate new and important knowledge
  - Impact to the AHA's mission
  - appropriateness of the budget

The scientific reviewers are also asked to screen each application for obvious irregularities including:

- Inappropriate format (type size, spacing, margins, etc.)
- Application does not "fit" with the mission / objectives of the agency
- Applicant does not qualify for the program selected

Depending on the seriousness of the irregularity, the application may be administratively withdrawn prior to review.

At the meeting of the review committee:

- Each application receives approximately 10 minutes of discussion.
- The two primary reviewers introduce each application and give their evaluations.
- Other committee members then participate in discussion by analyzing the written comments, asking questions and offering commentaries.
- The committee will consider all of the viewpoints presented, including those of the lay reviewers. So the final scores of both lay and science reviewers should be inclusive of the other point of view
- Each committee member then recommends a final score. Each committee member, except those in conflict, enters a score. The scores are averaged. After all of the applications in a committee are reviewed and scored, they are assigned a rank order.
- Policy, budgetary and ethical concerns are discussed after an application is scored. If the committee agrees there are concerns, the application is flagged for follow up with the applicant and/or final dispensation by the Research Committee of the funding component to which the proposal was made.

The rank orders and merit scores are forwarded to the Research Committee for the purpose of deciding how many applications to fund from each program category. There is usually agonizing discussion at the Research Committee level concerning the size of the AHA's budget vs. the number of applications that can realistically be funded. This becomes more difficult when many very good applications cannot be funded. Demand for funding far outweighs the funds available. Thus, many very good proposals will fall below the cut-off.

TECHNICAL SUPPORT

- Request support via email to apply@heart.org. This mailbox is monitored by a team of staff members who will triage your inquiry to the person who can best help you.
- Call us at 214-360-6107 to talk with a staff person about administrative or technical issues related to your proposal.
- Your institutional grants office can also be of assistance. Talk to them and find out how they can help you.
- Do not wait until the last minute to request technical support from the AHA with downloading, uploading or policy questions. It may take us more than a few minutes to resolve your issue.

ACKNOWLEDGMENTS

Concepts used in this document were adapted from numerous sources. Special acknowledgements go the following:

1. Jacob Kracier, MD, PhD, Professor, Department of Physiology, Faculty of Medicine University of Toronto, Medical Sciences Building, Toronto, Ontario, CANADA M5S 1A8
2. Barbara Marion (in memoriam), Adjunct Professor at University of San Francisco
3. Colleagues from the American Heart Association who examined this document and provided useful criticisms.

4. American Heart Association research applicants, external reviewers and members of review committees.