Tips for a Successful Grant Application

The purpose of the ASER Shan Grant is to support research, but more importantly to support ASER members in their professional growth as researchers- to build a cadre of academic emergency radiologists. Accordingly, we do not expect every grant awardee to be an established professor- rather, we expect a range of applicants with varying levels of experience in research. The purpose of this essay is to help less experienced researchers with the nuts and bolts of the application process.

Remember, we are looking for research that is feasible and will lead to deeper more consequential work downstream. We do not expect a massive project, but rather an incremental contribution to improving what is known in the field of emergency radiology. We would also like to see your professional growth as a part of the project. The best projects lead to a stream of future work, and a successful career!

Here are some tips for completing the application. Also, see the successful 2024 application from Dr. Lebedis as an excellent example. Her grant proposal was based on multi-center work with the ASER Research Committee. We DO NOT expect all applications to involve as many medical centers or be nearly as complex. But- this is a great example of how to write the grant. (link)

Hypothesis. Hypothesis is a statement of something that is not yet proven, that your research is designed to test. Examples include: "Pelvic fracture pattern predicts risk of arterial hemorrhage", "Multi-phase CT scan is more sensitive for identifying arterial injury", "ERAD shifts longer than 10 hours lead to increased error rates", etc. Whether these statements are true or not, we do not know yet, but your work will help get towards the answer. Please note that the hypothesis is generally a big picture statement, while the project itself may only address a very small portion of it.

Specific Aims. Specific aims are the one to three targeted goals of the research. This is a two year $20,000 project. We are not expecting you to solve world hunger. Rather, we are expecting small, incremental progress towards proving or disproving your hypothesis. Hopefully, your success in the specific aims for this grant will set you up for additional work going forward. Example include: "survey emergency radiologist to identify protocols for abdominal CT, with or without arterial phase", "collect a database of errors in emergency radiology interpretation across multiple institutions", "compile a teaching set to improve standardization in radiology interpretation of pelvic radiographs", "compare the accuracy of proton counting and traditional multi-detector CT for identifying vulnerable plaque" etc.

Background and significance. This is the section of the grant proposal where you will prove to the readers that the work is important. Do not start with an overview of emergency radiology. Start focused with your specific area, whether it be a type of injury, a modality, or a non-interpretive issue in emergency radiology. The team

evaluating the grant are all emergency radiologists. We know the big picture. You just have to make your work relevant and important.

Research design and methods. This is the most important part of the grant proposal, and should comprise the bulk of the pages. Tell us what you plan to do in detail. **How are you going to collect data?** Important considerations include retrospective versus prospective, how you identify cases or subjects, any ethical considerations around the identifying data and patient confidentiality. Can you recruit enough subjects or cases? How do you know? **How will you store the data?** This is particularly important if you have a multiple institutions in the study, as institutions have different rules about who is allowed to share data outside of the specific confidentiality firewall for that institution. Tools like Redcap can be useful here. **The analysis.** It is OK to say we will recruit statistical help, and use the grant funds to do it. However, you should at least have some idea of what you want to understand. Are you measuring accuracy, agreement, trend, association, or simply patterns as in survey data. **Institutional Review Board.** Has the IRB reviewed the proposal, or what is your plan for this?

Pilot data. What have you already done? If you have done any work previously, please share briefly the methods and results. This will help the panel to understand that you have the focus and resolved to succeed at the project. Figures are very valuable if you have pilot data. If you do not have pilot data, please say so. Sometimes ASER grants are the initial work that creates the pilot data for the next larger grant.

Figures. Figures of pilot data are useful. But also, a flow chart of how you're going to approach your project or collect the data can be a value, as can any data collection tools, or other aids that you already have that can be of use.

References. Keep this to those that are targeted, and that you will build on in your work. We do not need general emergency radiology references. They just take up space.