

Advice on writing Intellectual Merit and Broader Impact statements

The Intellectual Merit and Broader Impact statements are not always easy to write but the following guidelines may help you.

1. The two statements should be formatted and highlighted as separate pieces of text. It is common to see them presented as

Intellectual Merit. Text.....

Broader Impact. Text.....

2. Both statements should be written in an impersonal and objective style. They should not include any first person references or value judgments about the merits of your work. That is for the reviewers to decide!

Examples of unacceptable statements are:

“The research described here is absolutely cutting edge.....”

“Although the challenge is evident, my experience in the area has led me to believe....”

3. The Intellectual Merit statement should be a concise statement about the original contributions that the proposal research makes to the area of study – even if it is quite narrow. For example:

“The proposed research demonstrates how the asymptotic expansion for cheese-burgers can be extended to higher order by analytic continuation of the mustard quotient subject to rigorous upper bounds on the pickle dimension. This technique provides a new and efficient method for determining the grilling time under experimentally accessible conditions.”

3. It is often tempting to claim connections with other areas in the same field or in different fields. While there are no hard and fast rules, a connection to a closely related problem could be included in the Intellectual Merit section. For example: “Furthermore, these asymptotic techniques can also provide criteria for comparing charcoal and gas grilling protocols”. However, if there are possible connections to other disciplines (something that the NSF likes to see) or an application that could help solve important societal problems such statements might be better placed in the Broader Impact statement. For example: “Better grilling techniques have the potential to produce lower cholesterol levels in commonly consumed foods leading to a healthier national diet and a corresponding reduction in health care costs”.

Statements like: “Not having to teach would certainly allow to make better progress”, or “Personally, I bring a strong mathematics background to the mainly engineering based research group...” do not give any indication of the intellectual merit (or broader impact) of the proposal.

4. Broader Impact statements can describe the potential that the research has for across-fertilization of ideas between fields, e.g. how grilling asymptotics gives a new insight into the psycho-ceramic gestalt. Broader impact is also about the way in which the research can impact on human resources. The latter has become the main broader impact criterion, e.g. how a proposed research program will provide opportunities for undergraduate research experiences, and/or how in a suitable form it can be used for outreach projects to excite the interest of high school children from under-represented groups.

Statements like: “In particular, my results are in direct contradiction to what is observed experimentally and will hopefully change how...[the topic] is thought about”; or “We hope to publish in journals relevant to fields in both mathematics and physics” do not belong in the Broader Impact statement.