

Overall Impact versus Significance

Since the release and implementation of [NOT-OD-09-025](#), "Enhancing Peer Review: The NIH Announces Enhanced Review Criteria for Evaluation of Research Applications Received for Potential FY 2010 Funding," there has been some confusion regarding the distinction between Significance and Overall Impact. In response, the NIH Office of Extramural Research convened a working group consisting of NIH review and program staff to develop additional guidance on this issue.

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DEFINITIONS FROM NOT-OD-09-025

Significance: Does the project address an important problem or critical barrier to progress in the field? If the aims of the project are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved? How will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

Overall Impact: Reviewers will provide an overall impact score to reflect their assessment of the likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the following five core review criteria, and additional review criteria (as applicable for the project proposed).

KEY POINTS

Overall Impact

- Overall Impact is not a sixth review criterion.
- Reviewers will write a paragraph summarizing the factors that informed their Overall Impact score. This paragraph is not intended to be a summary and/or restatement of the strengths and weaknesses outlined in the critique. Rather, this paragraph should succinctly inform the reader (e.g., the applicant, program staff, members of council) the underlying rationale for the Overall Impact score in consideration with the scored review criteria.
- Overall Impact is not necessarily the arithmetic mean of the scores for the scored review criteria.
- Overall Impact takes into consideration, but is distinct from, the scored review criteria.
- Overall Impact is the synthesis/integration of the five core review criteria that are scored individual and the additional review criteria which are not scored individually.
- To evaluate, the reviewer(s) make an assessment of the *likelihood* for the project to exert a *sustained, powerful influence* on the *research field(s)* involved, in consideration

of the scored review criteria, and additional review criteria (as applicable for the project proposed).

- *Likelihood* (i.e., probability) is primarily derived from the investigator(s), approach and environment criteria.
- *Sustained powerful influence* is primarily derived from the significance and innovation criteria.
- *Research field(s)* may vary widely, so it would be helpful if reviewers identify in their reviews the research field(s) they believe will be influenced by each project.

Question: What should be included in the Overall Impact paragraph?

Answer: The Overall Impact paragraph provides the reviewer with the opportunity of explaining how the Overall Impact score was derived (*i.e.*, those factors that contributed to the score). If a project has a strong/weak Overall Impact score then the reviewer should highlight those scored criteria that contributed to the favorable/poor score. For example, if the potential significance of a study was so great as to overshadow a number of methodological weaknesses then this should be clearly stated. Likewise, if the design of the study is so flawed as to negate any potential significance and/or innovation of the study then this should be clearly stated. Importantly, the Overall Impact paragraph should provide a clear justification of those key factors that led to his/her Overall Impact score. It is not intended to simply summarize and/or restate the strengths and weakness detailed in the critique.

Significance

- Significance is evaluated and scored independently of the evaluation and scoring of Investigator(s), Innovation, Approach and Environment.
- The evaluation of significance assumes that the “aims of the project are achieved” and/or will be “successfully completed.”
 - Moreover, reviewers should evaluate the significance of the project within the context of a (research) field(s). For example, autism is a significant field of study but not all studies (projects) of autism are significant.
 - Research field(s) may vary widely, so it would be helpful if reviewers identify in their reviews the research field(s) within which the project addresses an important problem or critical barrier to progress.
 - The research field may be focused on a specific basic research area (enzymology) or a specific disease (*e.g.*, autism), or may be more broadly defined to cut across many health issues (*e.g.*, language training, psychology).

FREQUENTLY ASKED QUESTIONS

Frequently Asked Questions are available at the [Enhancing Peer Review website](#).

CASE STUDIES

- Case studies are intended to provide further clarity on the distinction between Significance and Overall Impact.
- They are not meant to be comprehensive or to be interpreted literally.

- Rather, they are intended to provide a conceptual framework for how to think about Significance and Overall Impact.
- Case studies are available at the [Enhancing Peer Review website](#).