



ORIENTATION TO PEER REVIEW





Goals of Peer Review

- Thorough and fair evaluation of scientific and technical merit

Focus of Peer Review

- Impact: Will the research have a sustained effect on science or practice

Aspects of Current Reviews

- Short applications; aligned with review criteria
- Short critiques
- Templates
- 1-9 Scoring scale
 - 5 Review Criteria (Significance, Investigator(s), Innovation, Approach, Environment)
- Overall Impact (not an average of 5 review criteria)



The Face Page

- Does the application include vertebrate animals, human subjects, request an exemption from human subjects, or include human embryonic stem cells (HESC)?
- Is it from a new investigator/early stage investigator?
- Is it a multiple PI applications?

PI: [REDACTED]	Title: [REDACTED]	
Received: 09/29/2010	FOA: PA10-067	Council: 05/2011
Competition ID: ADOBE-FORMS-B	FOA Title: Research Project Grant (Parent R01)	
[REDACTED]	Dual: AR	Accession Number: 3329189
IPF: 6297007	Organization: [REDACTED]	
Former Number:	Department: [REDACTED]	
IRG/ORD: AED	AIDS: N	Expedited: N
Subtotal Direct Costs (excludes consortium F&A) Year 1: [REDACTED] Year 2: [REDACTED] Year 3: [REDACTED] Year 4: [REDACTED]	Animals: Y Humans: N Clinical Trial: N Current HS Code: 10 HESC: N	New Investigator: N Early Stage Investigator: N
<i>Senior/Key Personnel:</i>		
[REDACTED]	[REDACTED]	PD/PI
[REDACTED]	[REDACTED]	MPI
[REDACTED]	[REDACTED]	Faculty

Multiple PI



What You Will See in the Research Plan

- **Specific Aims**
 - Includes language about the impact of the proposed research
- **Research Strategy**
 - Includes what used to be Background and Significance, Preliminary Studies/Progress Report, and Research Design and Methods
- **Facilities and Equipment**
 - Reflects the Environment criterion
 - For ESIs describes the institutional investment in the success of the investigator
- **Biographical Sketch**
 - Includes Personal Statement; up to five of the best; up to five of the most relevant to the proposed research; up to five of the most recent



Getting Ready to Review

- Prepare to identify major strengths and weaknesses
- Prepare to assign a score and write a brief paragraph about Overall Impact
- Prepare to also assign scores to each of the 5 “core” criteria
 - Significance
 - Investigator(s)
 - Innovation
 - Approach
 - Environment



Pre-Meeting Reviewer Responsibilities

- Know about Internet Assisted Review (IAR) in Commons
- Check assigned applications for hidden conflicts
- Alert SRO of any additional expertise you believe is necessary for a complete evaluation of any application
- Sign your pre-meeting Conflict of Interest (COI) form in IAR
- Make travel arrangements ASAP



Pre-Meeting Reviewer Responsibilities

You should immediately contact SRO

- If an applicant, other reviewer, or anyone else tries to contact you about any application
- If you suspect any research misconduct or plagiarism in the assigned application
- If there is a situation which may have even the appearance of a conflict of interest



Understand Your Assignments

- You will provide criterion scores for all assigned applications
- You will write either a complete critique or an overall impact paragraph depending upon instructions from your SRO
- Is this an “A1” Resubmission? If so, look for the one page introduction from the applicant to highlight the changes in this version



What to Look for: Overall Impact/Priority Score

- Consider criterion strengths and weaknesses of each application, but....
- Overall impact score is not an average of all criteria
- Use the 9-point scale (1 = exceptional, 9 = poor) consistently (see slide 19 for description of scores)
- Do not enter scores in the critique; you will upload them separately
- Use the full score range for all applications as appropriate



What to Look for: Overall Impact vs. Significance

- **Overall Impact:**
 - Probability of whether the research will exert a sustained, powerful influence on the research field
- **Significance:**
 - Does the project address an important problem or a critical barrier to progress in the field?
 - If the aims are achieved, how will scientific knowledge, technical capability, and/or clinical practice be improved
- **FAQ:**
http://grants.nih.gov/grants/peer/guidelines_general/impact_significance.pdf



Differences Between Overall Impact and Significance, cont.

- *Significance* is one of many factors which determine *Overall Impact*, but it is not the only one
- Also consider other criteria when determining *Overall Impact*:
 - Is the investigative team capable?
 - Is the approach sound?
 - Will the environment contribute to the success of the project?
 - Is there innovation in the application?



What to Look for: Innovation

- Found in the **Research Strategy**
- Does application challenge/seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?
- Are concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense?
- Refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?



What to Look for: Investigators/Biosketch

- **Personal Statement:**
 - Why investigators' experience and qualifications make them particularly well-suited for their roles in the project
- **Publications:**
 - Recommended: no more than 15---up to five of the *best*; up to five of the *most relevant* to the proposed research; up to five of the *most recent*
- If **Early Stage Investigators or New Investigators**, do they have appropriate experience and training?
- If **Established Investigator**, have they demonstrated ongoing record of accomplishments that have advanced their field(s)?
- Leadership Plan is needed for multiple PI applications



What Should You Do if the Principal Investigator Has Not Used the New Form for the Biosketch?

- Both old and new forms are permitted but may not exceed four pages.

What Should You Do if the Personal Statement in the Biosketch is Missing?

- Nothing



What to Look for in the Approach

- Well-reasoned and appropriate overall strategy, methodology, and analyses to accomplish the goal
- Well described potential problems, alternative strategies, and benchmarks for success
- For proposals in the early stages of development, strategy to establish feasibility and risky aspects of management is evident
- Expect experimental/methodological details to be brief, while a general empirical approach is still required
- Preliminary Studies and/or progress report may be presented as separate sections or embedded within Approach



What to Look for in Human Subjects or Vertebrate Animals Sections

If the Project Involves Human Subjects:

Are plans justified for:

- protection of human subjects
- inclusion of minorities, women, and children

If the project involves vertebrate animals:

Does the principal investigator address the five required questions?

Study section evaluation of protection of human and animal subjects is independent of IRB and IACUC review

http://grants.nih.gov/grants/peer/guidelines_general/Human_Subjects_Protection_and_Inclusion.pdf



What to Look for in Facilities and Equipment/Environment?

- Should be limited to those resources directly applicable to the proposed work
- Major items of equipment already available for the proposed studies should be listed under Equipment
- ESIs should describe institutional investment, e.g., start-up funds and mentoring arrangements.
- For multiple sites, resources at each site should be described
- Special facilities that handle biohazards, etc., should be included



Scoring

- Applications scored on five review criteria and Overall Impact using a scale of 1-9.
- All applications receive scores:
 - **Discussed applications** receive an overall impact score from each eligible (i.e., without conflicts of interest) panel member. Also receive criterion scores.
 - **Not Discussed** applications receive criterion scores from assigned reviewers



Score Descriptors for Overall Impact Score

Impact	Score	Descriptor
High Impact	1	Exceptional
	2	Outstanding
	3	Excellent
Medium Impact	4	Very Good
	5	Good
	6	Satisfactory
Low Impact	7	Fair
	8	Marginal
	9	Poor

Score Descriptors for Overall Impact Score

Impact	Score	Descriptor	Additional Guidance on Strengths/Weaknesses
High Impact	1	Exceptional	Exceptionally strong with essentially no weaknesses
	2	Outstanding	Extremely strong with negligible weaknesses
	3	Excellent	Very strong with only some minor weaknesses
Medium Impact	4	Very Good	Strong but with numerous minor weaknesses
	5	Good	Strong but with at least one moderate weakness
	6	Satisfactory	Some strengths but also some moderate weaknesses
Low Impact	7	Fair	Some strengths but with at least one major weakness
	8	Marginal	A few strengths and a few major weaknesses
	9	Poor	Very few strengths and numerous major weaknesses

Minor Weakness: An easily addressable weakness that does not substantially lessen impact

Moderate Weakness: A weakness that lessens impact

Major Weakness: A weakness that severely limits impact



How and What to Write in Your Critique

- **Consider your audience - Keep in mind who will be reading the critique**
 - Applicant
 - Program Officer
 - Other reviewers
 - SRO
 - Advisory Council
- **Be complete, concise, informative, and clear so that all parties understand your evaluations**



How and What to Write....

- *Overall Impact* requires a brief narrative paragraph. Not a cut/paste of bullets from elsewhere in the critique.
- Use bulleted points for *5 Review Criteria* to make succinct, focused comments (Be careful of being too brief; provide a context for your comment to help the reader understand)
- Focus on score-driving strengths and weaknesses (ones that had impact on your rating of the criterion and the overall impact)
- Criterion scores from 3 - 9 must describe weaknesses



What to Write: Overall Impact Paragraph

- **In a brief narrative, assess the likelihood that the project will exert a sustained, powerful influence on the research field(s) involved.**
 - *Likelihood* generally derived from the investigator(s), approach and environment criteria.
 - *Sustained, powerful influence* generally derived from the significance and innovation criteria.
 - *Research field(s)* may vary widely, so identify those you believe will be influenced.
- **Clearly articulate the Overall Impact as distinguished from the Significance, which is one of the five Review Criteria.**
- **Emphasize and prioritize the major score-driving strengths and weaknesses that contribute to your Overall Impact score.**



Format Comments for the 5 Review Criteria as Bullet Points

1. <u>Significance</u>
Strengths <ul style="list-style-type: none">•
Weaknesses <ul style="list-style-type: none">•

Criterion scores should not be entered on the template or discussed at the review meeting

Add additional bullets as desired



Excerpt from a Critique Template: Protected Form Fields and Drop-down Responses

The image shows a screenshot of a critique template with several form fields. The first field is titled "Protections for Human Subjects" and contains a "Click Here to Select" button, a "Comments (Required Unless Not Applicable):" section with a bullet point, and a "Data and Safety Monitoring Plan (Applicable for Clinical Trials Only):" section with another "Click Here to Select" button. A dropdown menu is open over the second "Click Here to Select" button, showing options: "Click Here to Select", "Acceptable", "Unacceptable", and "Not Applicable (No Clinical Trials)". Below this is a field titled "s and Children Applicable Only for Human Subjects Research" with three "Click Here to Select" buttons for "Gender Code", "Minority Code", and "Children Code", followed by a "Comments (Required Unless Not Applicable):" section with a bullet point.

Please use the template we provide.

Part of each template is a protected form.

Reviewers should NOT unprotect the forms!



Critiques Must be Submitted Using Internet Assisted Review (IAR) Before the Meeting

- Post critiques to the IAR
- Enter criterion scores and overall/priority score in IAR using dropdown menus
- Do not enter scores as part of the critique
- Once you post your critiques and IAR is in the Read Phase (approximately one week before the meeting), you can view the other critiques



Adhering to IAR Posting Deadline...

- Allows other reviewers to consider your opinions before the meeting and facilitates a more informed discussion
- Permits the SRO to review your critiques before the meeting and identify any problems or areas that need clarification
- Is needed to determine the Order of Review

IAR

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eRA Commons
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Welcome L
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Authority: IAR PI [Log-out](#)

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Submit Critique and Preliminary Score ?

[Back to List of Applications](#)

1. Save your critiques as MS Word or plain text documents. (Only MS Word or Text documents can be submitted.)
2. To submit a critique, simply press the browse button to locate the critique file or type the critique file name and path. (Example: c:\crit1.doc or c:\drive - type c:\crit1.doc).
3. Click Submit button.
4. To update a critique, click Confirm button.
5. To remove a critique use Delete Option available on the List of Applications.

Application:	1 R01 AAO -01
Title:	ZZ121 - EQ ... GRANT001
PI Name:	L . P
Assignment Role:	Pri 1
Significance	1 ▾
Investigator(s)	1 ▾
Innovation	1 ▾
Approach	1 ▾
Environment	1 ▾
Preliminary	1 ▾

Critique File:

[View Existing Critiques](#)

Please close the critique file on your computer before submitting.

New drop-down

Significance	1 ▾
Investigator(s)	1 ▾
Innovation	1 ▾
Approach	1 ▾
Environment	1 ▾
Preliminary	1 ▾

separate sections, discussion of the following

ARCH RISK:

... attributes, and necessity for the proposed

... in a foreign country. Include for [Fellowship](#)

... ed.)

... in RFA.)

... ng grants and/or pending applications.)

... the review guidelines for the specific type of
... nce from your SRA.

IAR

- You must close your critique file before submitting
- You must submit both the critique and scores at the same time (otherwise you will get error message)

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Submit Critique and Preliminary Score

[Back to List of Applications](#)

1. Save your critiques as MS Word or plain text documents. (Only MS Word documents are supported.)
2. To submit a critique, simply press the browse button to locate the file on your computer.
3. Click Submit button.
4. To update a critique, click Confirm button.
5. To remove critique use Delete Option available on the List of Applications page.

Application: 1 R01 AAD -01
Title: ZZ121 - EQ - - GRANT001
PI Name: L . P
Assignment Role: Pri 1
Significance: 1
Investigator(s): 1
Innovation: 1
Approach: 1
Environment: 1
Preliminary: 1
Critique File:
[View Existing Critique](#)

Please close the critique file on your computer before submitting.

INCLUSION OF CHILDREN PLAN:
VERTEBRATE ANIMALS:
BIOHAZARD:
FOREIGN INSTITUTION:
(e.g., Scientific advantages, any special or unique attributes, and necessity for the proposed work to be done in a foreign country.)
FOREIGN TRAINING:
(e.g., Scientific advantages of the proposed training in a foreign country. Include for Fellowship applications)
MODEL ORGANISM SHARING PLAN:
(Evaluate if, e.g., a new knockout is to be produced.)
DATA SHARING PLAN:
(For any application > \$500,000, or as specified in RFA.)
BUDGET:
BUDGETARY OVERLAP:
(e.g., There is potential overlap with other existing grants and/or pending applications.)

* NOTE - This list is not all inclusive. Please see the review guidelines for the specific type of application you are reviewing, and look for guidance from your SRA.



Before the Meeting: Prepare Your Oral Presentation

- During IAR “Read” phase before the meeting, review other critiques of the applications you reviewed
- Summarize the purpose/hypothesis of the proposed work very briefly (one to two sentences)
- Please state Overall Impact up front
- Summarize the approach (one to two sentences)
- Briefly describe the important strengths and weaknesses that lead you to give the Overall Impact score you did



At the Meeting: Order of Review

- Applications will be discussed in order of average preliminary impact score from assigned reviewers (from best to worst), within clusters (e.g. R01, R21, R03)
- NI/ESI R01s will be clustered separately from established investigator R01s. In a multi-PI application, ALL PIs must be NI/ESI for the application to qualify



At the Meeting: How to Discuss?

- All reviewers are expected to participate in the entire meeting
- Maximum time for discussion is 10 – 15 minutes per application (not per person...)

At the Meeting: What Should I Say?

- Start by stating the Overall Impact
- Highlight main points (those which drove your score) rather than reading your critique
- It is important to have close correspondence between your final score and your written critique, so please edit your critiques to be consistent with your final opinion
- Only contribute substantive new points to the discussion



At the Meeting: What Should I NOT Say/ Do?

- Do not read your critique
- Do not present or discuss criterion scores
- Do not discuss funding
- Do not say “This is outside my area” – if it is, you should have talked with the SRO earlier
- Do not discuss budget or administrative issues before scoring
- Do not bring up previous scoring
- Do not focus on whether or not this is the ‘last’ submission



At the Meeting: Final Scores

- Discuss ~50% of applications
 - When at ~50%, SRO/Chair will ask if there are any other applications that panel wishes to discuss
 - The remaining applications will not be discussed (applications receive criterion scores and written comments only)
- All reviewers not in conflict will score all discussed applications
- The full range of scores is available for Overall Impact score for all discussed applications
- Final scores of discussed applications may differ from preliminary scores as recalibration happens dynamically during the meeting



Final Scores, cont.

- **Range of Scores**

- After discussion, assigned reviewers state final Overall Impact score, defining the score range
- Any intent to score outside the range of assigned reviewers must be declared, even if range is a single number
- The reason for out of range scoring is desirable but not necessary
- You should feel free to score outside the range based on your determination of the overall impact of the application

Finding Your Online Voter Sheet **

*** this will not be visible until the meeting actually begins*

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List of Applications

IMPORTANT: Remember that the information contained on this web site is private. Any information concerning applications, critiques or scores is highly confidential. Please remember to destroy all review materials after the review session is over. This includes all paper copies that were printed as well as and electronic files that you may have downloaded. This also pertains to the CD containing the applications being reviewed that you may have received and any files that were copied from there. If you do download files make sure that they are downloaded to a secure PC and not to any network drives or servers.

Meeting Title: [Redacted] Meeting Dates: [Redacted]
Meeting Identifier: [Redacted] Critiques Due: [Redacted]
Meeting Phase: [Redacted] Eastern Standard Time / Eastern Daylight Time

View Critique Options: [View All Meeting Critiques](#) [By Appl.](#) [By PI](#) [View My Critiques](#) [View All Critiques for Assigned Applications](#) [View Meeting Materials](#)

List Application Options: [List All Applications](#) [List My Assignments Only](#) [Preliminary Score Matrix](#)

Final Scores: [Reviewer Voter Sheet](#)

[List of Meetings](#)

Review Order	Application Act/IC/Serial# IC/Serial#	PI Name [Parent Application PI] PI Name	New PI	Title	Role	Prelim. Score	Action
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Save after every application!

Do not enter criterion scores if you are not an assigned reviewer.

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Voter Sheet

Meeting Title: [Redacted]
Meeting Identifier: [Redacted]
Meeting Phase: [Redacted]
Final Score Entry: [Redacted]

Meeting Dates: [Redacted]
Critiques Due: [Redacted]
Final Score Entry Duration: [Redacted]

[Criterion Scores Label Report](#)

Reviewer Name: AGABIAN, NINA

Rev Order	Application Number Act/IC/Serial# IC/Serial#	PI Name [Conflicts] [Parent Application PI] Activity/PI Name PI Name	Assignment Role	Criterion Scores					Final Score (1 to 9) , ND, NR, DF, NP, AB, CF	Action
				1	2	3	4	5		
1	[Redacted]	[Redacted]	Pri 1	1	3	2	3	4	5	Save All
2	[Redacted]	[Redacted]	Unassigned						6	Save All
2	[Redacted]	[Redacted]	Unassigned						CF	Save All
4	[Redacted]	[Redacted]	Unassigned						4	Save All
5	[Redacted]	[Redacted]	Unassigned							Save All
6	[Redacted]	[Redacted]	Unassigned							Save All
7	[Redacted]	[Redacted]	Unassigned						4	Save All

Reviewer is in conflict



Post-meeting Reviewer Responsibilities

- Note IAR Edit Phase deadline posted in Commons
- Modify your critiques & criterion scores to reflect your final opinion
 - Add important weaknesses that were identified
 - Remove criticisms that were negated
- For Not Discussed applications make sure that your critiques and criterion scores reflect the decision to not discuss
- When your numbers, words, and ideas all match in your written critique, it makes much more sense to the applicant, who receives the summary statement after the meeting



CSR Converts Critiques into Summary Statements

- Overall Impact/priority scores of discussed applications will be the average of Overall Impact scores voted by all eligible reviewers, averaged to one decimal place and multiplied by 10
- Final scores seen by the applicant will range from 10-90, in whole numbers
- Summary statements for ALL applications will include the criterion scores and critiques posted by assigned reviewers
- Summary statement for DISCUSSED applications also includes the resume and summary of discussion, written by the SRO

SRO Contact Information:

<http://internet.csr.nih.gov/ReviewerOrientation/Default.aspx>

national institutes of health



center for
scientific review

the measure and future
of science and health

Reviewer Orientation Site

Goal: To inform reviewers of their roles in peer review and of steps to take throughout the process in order to perform the highest quality assessments of the scientific and technical merits of applications. There are many [benefits](#) to service. For a comprehensive overview of the CSR review process, see [General Review Information](#). (NOTE: Fellowship and SBIR-specific information will be added in early 2011.) For specific meeting steps, see these links

[Pre-Meeting](#)

[Plan Travel](#)
[Initial Duties](#)
[Ethics/Ethical Issues](#)
[Begin Reviews](#)
[Review Applications](#)
[Write Critiques](#)
[Score applications](#)
[Prepare for Meeting](#)

[Meeting](#)

[Know meeting roles](#)
[Honor peer review](#)
[Follow review order](#)
[Present applications](#)
[Discuss applications](#)
[Score Applications](#)
[Non-Scorable Issues](#)
[Leave meeting properly](#)

[Post-Meeting](#)

[Do homework](#)
[Creating/Updating my profile](#)
[Look after reimbursement](#)
[Provide CSR feedback](#)

Please complete a short 12 question survey [here](#)

For additional info please see

- mock study section video (15 minutes) [NIH Peer Review Revealed](#)
- [Dr. Scarpa's slideshow from most recent Chair Orientation](#)