Writing effective critiques for
NIH FELLOWSHIP (F31 and F32) applications

This document informs reviewers about how to prepare critiques for **fellowship applications** that best support informed funding decisions by NIH institutes and give clear feedback to applicants. It includes fictitious examples of weak and strong comments for each major section in the critique template; points highlighted in red explain why comments made in the critique are considered effective or not.

General guidance for all sections of the critique:
- A fellowship award is a *training* award and NOT a research award. Judge the application for its ability to make a strong impact on candidate's Research Training and Scientific Career Development.
- Avoid general comments and provide specific details.
- When possible, note how strengths and weaknesses will affect the training goals.
- Make sure that the text within each criterion is consistent with the score.
    - Scores of 1-3 should be supported by clearly articulated strengths and only minor weaknesses.
    - Scores of 4-6 may have a balance of strengths and weaknesses.
    - Scores of 7-9 should be supported by clearly articulated major weaknesses and/or lack of strengths).
- Prioritize strengths and weaknesses by indicating if they are major (score-driving) or minor.
- Provide sufficient context to orient comments (e.g., does the comment refer to a specific aim?)
- Make sure bullets have evaluative statements that indicate your assessment of a particular aspect of the application.
- Follow review criteria for the specific activity (F30, F31, F32, F33)
- In addition to Overall Impact, address all relevant review criteria and critique sections:
    - (1) Fellowship Applicant
    - (2) Sponsors, Collaborators, and Consultants
    - (3) Research Training Plan
    - (4) Training Potential
    - (5) Institutional Environment

Overall Impact

Overall Impact: *What is the likelihood that the fellowship will enhance the candidate's potential for, and commitment to, an independent scientific research career in a health-related field?*

Remember:
- The science is important, but it is not the sole criteria by which these applications should be judged. Consider all criterion in determining overall impact.
- An application does not need to be strong in all categories to be judged likely to have a major impact.

Write a paragraph to support your overall impact score.
- Very briefly introduce the proposed training goals.
- Identify what the **major** score driving issues were for you. Be specific.
- Explain how you balanced or weighted the various criteria in your overall impact score.
- Given your assessment of the applicant's potential and need for the proposed training, state the degree to which the research project, training potential, sponsor(s)/collaborators, and environment will satisfy those needs.
- Balance of strengths/weaknesses should be consistent with overall score.

This may be the MOST important part of your review. It comes first but is a synthesis of all the completed sections of your critique template.

Overall Impact: *Write a paragraph summarizing the major factors in all review criteria that informed your Overall Impact score*

LESS EFFECTIVE	EFFECTIVE
This is a good proposal from an excellent PhD candidate, sponsor and institution. The main hypothesis of the proposal is simple; however its physiological importance is not entirely clear. The use of XX as the main model for studying ABC differentiation can be expanded to include additional ABC cells to strengthen the relevance. A more thoughtful hypothesis and experimental plan would be highly beneficial to the applicant.	This carefully prepared application proposes training in XX and YY. It is from an applicant with outstanding scholastic preparation and evidence of productivity in all respects. The Sponsor and co-Sponsor have substantial and relevant track records mentoring PhD students and have complementary expertise. The research plan employs an interdisciplinary approach to investigate X pathogenesis and the project provides an ideal context in which to be trained in XX and, if successful, will likely lead to strong publications. However, Aim 3 relies on the success of Aims 1 and 2, and the studies in Aim 1 lack sufficient justification. The applicant will learn many new techniques and the sponsor provides a detailed description of technical and academic milestones for the applicant's training that are consistent with her goal of being a research professor—a major strength of the application. The institution has suitable equipment and facilities as well as other outstanding faculty and students with whom the applicant will interact. The strong candidate, clear engagement of the sponsor/co-sponsor, and skill development that will result from the proposed research and training mitigate the moderate weaknesses in the design of the research plan. Overall, it is likely that the activities described in this proposal will provide strong training to advance the applicant's research independence.

Annotations for LESS EFFECTIVE column:

Overly general.

On what bases is the candidate excellent?

How were these criteria weighted in your overall score

Excessive focus on research without attention to how it effects training.

Avoid wording that suggests how the application should be improved

Annotations for EFFECTIVE column:

Uses clear and specific language to explain points.

Highlights the main score-drivers.

Indicates importance of strengths and seriousness of weaknesses when appropriate.

Explains how the strengths and weaknesses were balanced to arrive at the final score.

Fellowship Applicant

Does the applicant have the potential to develop into an independent and productive researcher in biomedical, behavioral or clinical science?

- Assess the applicant's academic record and research experience.
- Assess evidence of productivity – publications, meeting abstract presentations, contributions to collection of data.
- Evaluate letters of recommendation for detailed strengths or weaknesses.
- Evaluate whether the applicant's record to-date and proposed fellowship activities demonstrate commitment to an independent research career.

Avoid any comments that may disclose letter writers; breach confidentiality
Focus on qualities of the applicant rather than on qualities of the application

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1. **Fellowship Applicant**

LESS EFFECTIVE	EFFECTIVE
Strengths	**Strengths**
• Applicant is strong	• The applicant demonstrates a significant track record of research productivity for her career stage, including two first author publications, four co-authored publications and two additional co-authored pubs in preparation. (major)
• Significant research experience	
• Letters of recommendation are uniformly enthusiastic.	• Letters of recommendation detail the candidate's experimental prowess, scholarly approach, and drive.
• Her grades are solid and she has been productive during her time in the W lab.	
Weaknesses	**Weaknesses**
• Grades could be stronger.	• No evidence of productivity from her two years in the XX lab.
• Limited background in XX.	• Poor undergraduate academic record - Cs, Ds, and an F. Despite vast improvement in graduate school, undergrad performance is left unaddressed by the candidate.
• The research focus is poorly conceptualized.	• Limited biochemistry/organic chemistry background to prepare applicant for Aim 2.
• GRE scores are poor -	

Annotations (LESS EFFECTIVE, left margin):

Too general. No detail provided

How does this strengthen/ weaken the applicant's potential to benefit from the fellowship?

Pertains to another criterion, not Applicant.

GRE scores are no longer required

Annotations (EFFECTIVE, right margin):

Detailed and clear statements of why these are strengths of the Candidate.

Clearly articulates why it is considered a weakness

Sponsors, Collaborators, and Consultants

Does the sponsor(s) have the following to support the proposed training?

Research qualifications:
- Does the sponsor's record of research accomplishment suggest success for the proposed training?
- Does the sponsor and training team have the expertise for success in the proposed training?

Mentorship experience and commitment to the candidate
- How does the sponsor's mentoring history suggest that they will be a strong mentor to the applicant? In the absence of a significant mentoring history, what indicates that he/she will be a strong mentor?
- If a co-sponsor is named, are specific contributions to training noted?
  ➢ Is there a plan for coordinated mentoring?
- Do the sponsors demonstrate a high level of commitment to the candidate by providing a personalized training plan? Do letters of collaboration convey commitment?

Adequate funds to support the proposed training
- Is there confidence that the mentoring team will have sufficient research funds over the duration of the training period? (it is appropriate to balance current funding with a history of funding awards.)

2. **Sponsors, Collaborators, and Consultants**	
LESS EFFECTIVE	**EFFECTIVE**
Strengths • She has published 5 papers in the last 3 years. • The sponsor is outstanding • The team is very strong. • The sponsor's group is large. • The sponsor has a good track record of funding.	**Strengths** • Over the past 3 years, the sponsor has published multiple key papers on the proposed topic important to this field. • While the sponsor has some experience in XX, she has assembled a strong team of collaborators, each expressing commitment (through strong letters), to provide essential expertise for the successful training of the candidate. • The primary sponsor has a strong record of mentoring; many of her mentees currently have faculty research positions. • The primary sponsor has sufficient funding throughout the training period.
Weaknesses • The sponsor is quite junior. • Since becoming independent, the sponsor has not published in top tier journals.	**Weaknesses** • Sponsor's experience in conducting technically complicated studies involving XX is not extensive; with the expert collaborator being off-site, it was unclear that she can provide critical guidance for XX methodology. • Expertise in MM, particularly important for completing Aims 2 and 3, is lacking.

(Left margin annotations:)

Too general, how do these "strengths" enhance training?

How does this speak to the likelihood of funding for this training?

By itself, this has no bearing on the success of the training.

How will this affect the project?

(Right margin annotations:)

Detailed and specific measures/ qualities

Detailed and specific concerns

Research Training Plan

Is the research plan well integrated with the candidate's goals, will it expand the candidate's conceptual understanding and is the plan of high scientific quality?

- Keep your focus on the big picture; don't get bogged down in the experimental details. Focus more on rationale.
- Has the candidate properly considered alternative outcomes or methodologies?
- Describe why you think an aspect of the approach is a strength or a weakness. Avoid just restating the key aims or other descriptive information in the application.
- Are publishable results from the work likely? Is the amount of work proposed feasible within the timeframe requested?
- Is the work proposed sufficiently distinct from the sponsor's funded research for the applicant's career stage?
- Is the scope of the work proposed appropriate for the candidate's career stage?
- Evaluate with candidate's career stage in mind. An F31 application from a second year graduate student should be assessed differently than an F32 application from a second year post-doc.

3. Research Training Plan

	LESS EFFECTIVE	EFFECTIVE	
	Strengths	**Strengths**	
Too general Why? How?	• Approach is strong. • Using the XX method is a strength. • Experiments are complex, but the PI is so productive that she will likely be successful. • These studies will lead to new insights into ZZ disease.	• The studies are built on a strong driving rationale that the interaction between XX with YY results in ZZ. • The combination of XX and YY studies will establish the role of ZZ in ABC disease progression by developing methods to XYZ. • The experimental design is comprehensive and cohesively covers all aspects of XX. Alternative strategies are well thought out, with potential problems and limitations associated with YY and ZZ acknowledged. (major)	Detailed and specific reasons
	Weaknesses	**Weaknesses**	
Too general, descriptive not detailed.	• The XX model system is too artificial. • The aims are too diffuse. • The measures of XX are weak. • The proposal is overly ambitious.	• The research proposed is not sufficiently novel to lead to publications, which are critical for the candidate's progress. • Use of XX in the YY model system will not faithfully mimic ZZ disease, due to A and B. • Results from the XYZ experiment may be very difficult to interpret because it will be challenging to separate the effects of XX from YY. • Aim 1 is risky, which raises questions about feasibility of getting to Aims 2 and 3, where the highest training potential exists. (moderate)	

Training Potential

Do the proposed research project and training plan have the potential to provide the applicant with the requisite individualized and mentored experiences that will develop his/her knowledge, research and professional skills?

- The training should be consistent with applicant's career goals in a health-related field and help them advance to the next stage. If a specific career goal has not been chosen (for an F31), the training should be consistent with the various options.
- Is the proposed research complementary to previous training (particularly for F32)? What new research areas/skills/techniques will be learned?
- The sponsor's training plan and applicant's proposed activities should address any weaknesses/gaps in the applicant's background relative to their career goal.
- The training plan and applicant activities should include non-research training appropriate to the career goals (e.g., teaching, coursework, grant-writing, presentations)

4. **Training Potential**	
LESS EFFECTIVE	**EFFECTIVE**
Strengths	**Strengths**
• This is a super applicant who will be a *leader in the field.*	• The applicant will build on his strong previous training in x by performing wet lab and crystallography experiments appropriate for his academic career goal as a biochemist. (Major)
• The applicant will learn many new skills.	• The applicant will take a course in y to address that gap in his background.
• The research plan provides training in y and z.	• The applicant's planned activities include attending national meetings and making presentations. (Minor)
Weaknesses	**Weaknesses**
• Few non-research training activities are proposed.	• The sponsor provides a generic training plan and does not indicate how he will address the applicant's lack of research training in y.
• The applicant is staying in the same field.	• The research plan is not set up to provide the applicant timely publications that will help him be an attractive candidate in the z job market.
	• The sponsor does not indicate any plan to train the applicant in writing grants or publications, critical to his goal of academia.

Side annotations (left):

How does this training help him/her get there?

What are they and how do they advance him/her toward the career goal?

Are these gaps that needed to be filled on the career path?

Be specific and indicate the relationship to the career goal.

Not necessarily a weakness; explain why if you think it is.

Side annotations (right):

Detailed and clear statements of strengths and weaknesses with an indication of their relative importance