

 National Institute of Dental and Craniofacial Research

## Overview of NIH Peer Review and Grant Application Changes



Lynn Mertens King, PhD  
Chief, Scientific Review Branch  
National Institute of Dental & Craniofacial Research  
National Institutes of Health

---

---

---


---

---

---



---

---

 National Institute of Dental and Craniofacial Research

### Overview of NIH Peer Review - grants

- Mandated by law: The Public Health Service Act
  - Two-tiered system
  - Initial peer review (study section, SRG, etc.)
  - National Advisory Council or Board
- Defined in regulation: 42 CFR 52h
- Further defined by NIH policy on Peer Review and NIH Guide Notices



---

---

---

---

---

---

---

---

 National Institute of Dental and Craniofacial Research

### NIH Peer Review Process

**NIH policy requires:**

- Peer review be carried out in a manner that ensures objectivity, fairness, and scientific and technical competence.
- All applications accepted for review are subjected to the same review process.
- Both levels of NIH peer review must be conducted in accordance with applicable laws, regulations, and policies.



---

---

---

---

---

---


---

---

National Institute of Dental and Craniofacial Research

### NIH Peer Review Process

- Conducted according to the Federal Advisory Committee Act (FACA)
  - Meetings are closed to the public
  - All materials and discussions – strictly confidential



4

---

---

---

---

---

---

---

---

National Institute of Dental and Craniofacial Research

### Initial Peer Review

- **Scientific Review Groups (SRGs) make recommendations:**
  - Scientific and technical merit
  - Protections for human subjects, women, minorities, children inclusion plans, animal welfare, biohazards
  - Budget amount and project duration
  - Resource sharing plans
  - Other administrative considerations

*SRGS DO NOT MAKE FUNDING DECISIONS*

**• Per year:**  
– Nearly 80,000 applications  
– Over 18,000 reviewers

5

---

---

---

---

---

---

---

---

National Institute of Dental and Craniofacial Research

### Second Level of Review

- **Advisory Councils or Boards**
  - **Make recommendations** to the IC Director
    - Applications to consider for funding
    - Emerging areas of sciences
    - Program priorities
    - Appeals of initial peer review
- *COUNCILS DO NOT MAKE FUNDING DECISIONS*

6

---

---

---

---

---

---


---

---

**National Institute of Dental and Craniofacial Research**

### NIH Peer Review Process

- **IC Director**
  - Recommendations from Advisory Council
  - Recommendations from NIH IC staff
  - NIH or IC policy
- **FINAL FUNDING DECISIONS**



7

---

---

---

---

---

---

---

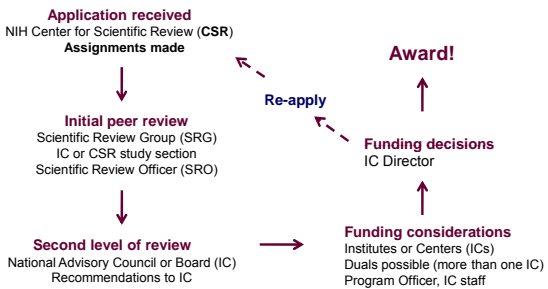
---

---

---

**National Institute of Dental and Craniofacial Research**

### NIH Peer Review Process



8

---

---

---

---

---

---

---

---

---


---

**National Institute of Dental and Craniofacial Research**

### Review Cycle

	Cycle I	Cycle II	Cycle III
<b>Scientific Merit Review</b>	June - July	October - November	February - March
<b>Advisory Council Review</b>	October	January	May

**Standard Receipt Dates for Competing Applications**  
<http://grants.nih.gov/grants/funding/submissionschedule.htm>



9

---

---

---

---

---


---

---

---

---


---

 **Continuous Submission** National Institute of Dental and Craniofacial Research

Modified receipt for **eligible investigators**, applicable to **R01, R21 and R34** applications normally submitted for *standard due dates*.

**See NIH Notices:**  
[NOT-OD-08-026](#)  
[NOT-OD-09-114](#)  
[NOT-OD-09-155](#)  
[NOT-OD-10-090](#)

**Eligibility:**  
 Appointed members of:  
 • chartered standing NIH Study Sections  
 • NIH Boards of Scientific Counselors,  
 • NIH Advisory Boards or Councils,  
 • NIH Program Advisory Committees, and  
 Peer reviewers who have served as regular or temporary members of peer review committees six times in 18 months.

 10

---

---

---

---

---

---

---

---

---

---

---

---


 National Institute of Dental and Craniofacial Research

**Where will my application be reviewed?**

**Referral to an SRG**

<p><b>CSR Review</b></p> <ul style="list-style-type: none"> <li>• Most R01s, fellowships, small business applications, AREA</li> <li>• Some Program Announcements (PAs)</li> <li>• Some Requests for Applications (RFAs)</li> </ul>	<p><b>Institute/Center Review</b></p> <ul style="list-style-type: none"> <li>• IC-specific features</li> <li>• Program Projects</li> <li>• Training grants</li> <li>• Career Development Awards</li> <li>• Clinical Trials</li> <li>• RFAs</li> </ul>
---	---

*The review locus is stated in the Funding Opportunity Announcement (FOA)*

 11

---

---

---

---

---

---

---


---

---

---


---

---

 National Institute of Dental and Craniofacial Research

**Types of Scientific Review Groups (SRGs)**

- **“Chartered” SRGs**
  - Multiyear terms (4-6 years) **NEW 6-year terms, since 7/2009**
  - Formal appointment process
  - May include temporary members (per meeting) for additional or special expertise
- **Special Emphasis Panels (SEP)**
  - Meet on *ad hoc* basis, often only once
  - Temporary membership

 12

---

---

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Scientific Review Officer (SRO)

- **First level of peer review**
  - Designated Federal Official
  - Identifies and recruits reviewers
    - Expertise, stature in field, impartiality, availability
    - Committee diversity with respect to the geographic distribution, gender, race and ethnicity
  - Manages Conflicts of Interest (COI) between a reviewer and an application
    - Examples: financial, personal, professional, SRG membership
  - Oversees arrangements for review meetings
  - Presides at review committee meetings
  - Prepares and releases summary statements

13

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Reviewer Assignments

*Assignments are confidential!*

- **For each application:**
  - ≥ Three qualified reviewers are assigned
  - Assignments are made by the SRO
    - Based on the scientific content of application
    - Expertise of the reviewer
    - Suggestions from the PI on required expertise  
*-no names!*
    - Suggestions from Program staff, SRB members
  - Additional considerations for assignments
    - Managing conflicts of interest
    - Balancing workload

14

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Enhancing Peer Review

January 2009

- Phase out of A2 applications
- Identification of Early Stage Investigator (ESI) R01 applications

May/June 2009  
Reviews

January 25, 2010  
Submissions

- Clustering of New Investigator Applications
- Enhanced review criteria
- New scoring system
- Criterion scoring
- Structured critiques

- Restructured Applications
- Shorter Page Limits and New Instructions

15

---

---

---

---

---


---

---

---

---


---

 **Phase out of A2 applications** National Institute of Dental and Craniofacial Research

**Resubmissions (Amended) Applications**

- The NIH will accept only a single amendment (**resubmission, A1**) to the original application (A0)
- An A2 (second re-submission) application is allowed until January 7, 2011 if the A0 (original) application was submitted before the new policy began (January 25, 2009)

[NOT-OD-09-003](#) October 8, 2008

 16

---

---

---


---

---

---

---

---


 **NI/ESI Goals** National Institute of Dental and Craniofacial Research


**Background:**

- Concern about the number of New Investigators (NI) and the increasing age at first award.

**Goals:**

- Enrich the applicant pool with enough Early Stage Investigator (ESIs) to reduce the average age at first award
- Accelerate the period of training leading to independence



 17

---

---

---


---

---

---


---

---

 **NI/ESI Definitions** National Institute of Dental and Craniofacial Research

- **New Investigator (NI):** A Program Director or Principal Investigator (PD/PI) is considered a New Investigator if he/she has not previously competed successfully as PD/PI for a "significant independent" NIH research award (R01, R01 equivalent).
- **Early Stage Investigator (ESI):** A subset of New Investigators who are within 10 years of receiving terminal degree or end of medical residency, whichever occurred most recently (requests for extension will be considered).

<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-121.html>  
[NOT-OD-08-121](#) September 2008

 18

---

---

---

---

---

---

---

---



**Enhancing Peer Review** National Institute of Dental and Craniofacial Research

### Overview and Timeline

- January 2009**
  - Phase out of A2 applications
  - Identification of Early Stage Investigator (ESI) R01 applications
- May/June 2009 Reviews**
  - Clustering of New Inv. Applications
  - Enhanced review criteria**
  - New scoring system**
  - Criterion scoring**
  - Structured critiques**
- January 25, 2010 Submissions**
  - Restructured Applications
  - Shorter Page Limits and New Instructions

22

---

---

---

---

---

---

---

---

---

---

**Enhanced Review Criteria** National Institute of Dental and Craniofacial Research

**Overall Impact: *Likelihood for the project to exert a sustained, powerful influence on the research field(s) involved***

- In consideration of:**
  - At least **five scored criteria**
    - Receive individual, numerical scores
  - Additional criteria**, as applicable for the project proposed
    - Do not receive individual, numerical scores
    - Additional criteria in certain announcements

23

---

---

---

---

---

---

---

---

---

---

**Overall Impact Score** National Institute of Dental and Craniofacial Research

- ✓ **Research Project Grant (RPG):** likelihood for the project to exert a sustained, powerful influence on the research field(s) involved, in consideration of the five core review criteria, and additional review criteria
- ✓ **Fellowship (F):** likelihood that the fellowship will enhance the candidate's potential for, and commitment to, a productive independent scientific research career in a health-related field, in consideration of the scored and additional review criteria
- ✓ **Career Development (K):** likelihood for the candidate to maintain a strong research program, taking into consideration the criteria in determining the overall impact/priority score

24

---

---

---

---

---


---

---

---

---

---



 **Enhanced Review Criteria** National Institute of Dental and Craniofacial Research

**Scored Review Criteria**

- Applications for:
  - Research grants
  - Cooperative agreements
- Other criteria apply to other mechanisms

- Significance
- Investigator(s)
- Innovation
- Approach
- Environment
- (FOA-specific criteria)

See **“Review Criteria at a Glance”**  
[http://grants.nih.gov/grants/peer/reviewer\\_guidelines.htm](http://grants.nih.gov/grants/peer/reviewer_guidelines.htm)

  25

---

---

---

---

---

---

---


---

---

---

---

---



 **Peer Review Criteria** National Institute of Dental and Craniofacial Research

**Additional Review Criteria**

As applicable for the project proposed, reviewers:

- Consider in determining scientific and technical merit
- **Do not** give separate scores for these items.

- *FOA-specific criteria*
- *Protections for Human Subjects*
- *Inclusion of Women, Minorities, and Children*
- *Vertebrate Animals*
- *Resubmission Applications*
- *Renewal Applications*
- *Revision Applications*
- *Biohazards*

  26

---

---

---

---

---

---

---


---

---

---

---



---

 **NIH Peer Review** National Institute of Dental and Craniofacial Research

**Additional Review Considerations**

- As applicable for the project proposed, reviewers:
- Address each item
- **Do not** give scores for these items
- **Should not** consider them in providing an overall impact/priority score.

- *FOA-specific considerations*
- *Select Agent Research*
- *Applications from Foreign Organizations*
- *Resource Sharing Plans*
- *Budget and Period Support*

  27

---

---

---

---

---

---

---


---

---

---


---

---

 **NIH Scoring System** National Institute of Dental and Craniofacial Research

- **Numerical scores**
  - 1.0 (exceptional) to 9.0 (poor)
  - Final impact/priority score - average of individual scores x 10
  - Individual criterion scores
  - Ranked by percentile for some mechanisms
  - Not Discussed (ND) - streamlining
  - Other designations (NR, DF, AB, NP)

*Final impact/priority scores range from 10 through 90.*

 28

---

---

---

---

---


---

---

---


---

---

 **NIH Scoring System** National Institute of Dental and Craniofacial Research

- **Preliminary scores** (before the SRG meeting)
  - Overall Impact and Criterion scores entered by assigned reviewers and discussants in secure website
  - Made available to other SRG members
- **Final overall impact/priority scores** (at the SRG meeting)
  - Voted by private ballot
  - All eligible SRG members vote

*Reviewers are instructed to revise their criterion scores after the meeting.*

 29

---

---

---

---

---


---

---

---


---

---

 **NIH Scoring System** National Institute of Dental and Craniofacial Research

**Score Descriptors**

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

 30

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

## Streamlining

- **Allows discussion of more meritorious applications**
  - Less meritorious applications tabled at the
  - SRG meeting, designated **Not Discussed (ND)**
  - Requires concurrence of all SRG members
- **Summary statement of ND applications:**
  - Reviewer critiques
  - Individual criterion scores
  - No numerical, overall impact/priority score

31

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

## Structured Critiques

- **New summary statement format**
  - Bulleted comments from reviewers, less text
  - Criterion scores from assigned reviewers
  - More succinct, better organized
  - Encourages evaluative statements
  - Ensures that reviewers address all review criteria and considerations

**Critique templates are available at:**  
[http://grants.nih.gov/grants/peer/reviewer\\_guidelines.htm#general\\_guidelines](http://grants.nih.gov/grants/peer/reviewer_guidelines.htm#general_guidelines)

32

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

## Templates for Reviewers

**hyperlinks to definitions of review criteria**

→ **1. Significance** | Please limit text to 1/4 page

Strengths: Describe major strengths and weaknesses. Provide succinct, meaningful comments.

Weaknesses:

Text boxes expand

→ **2. Investigator(s)** | Please limit text to 1/4 page

Strengths: Limit text to 1/4 page per criterion, although more text may occasionally be needed.

Weaknesses:

33

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research


## Structured Critiques

**Summary statement:** Table of criterion scores are included at the beginning of each critique.

**CRITIQUE 1:**

Significance	2
Investigator(s)	1
Innovation	2
Approach	3
Environment	2

**Criterion scores are not discussed/revisited during the review meeting**



34

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

## Enhancing Peer Review Overview and Timeline

January 2009


- Phase out of A2 applications
- Identification of Early Stage Investigator (ESI) R01 applications

May/June 2009  
Reviews

- Clustering of New Inv. Applications
- Enhanced review criteria
- New scoring system
- Criterion scoring
- Structured critiques

January 25, 2010  
Submissions

- Restructured Applications**
- Shorter Page Limits and New Instructions**



35

---

---

---

---

---

---

---

---

---


---

National Institute of Dental  
and Craniofacial Research

## Restructured Applications

**Goals**

- ✓ Align the structure and content of the application with review criteria
- ✓ To ensure that both reviewer and applicant expectations coincide for a more efficient and transparent application process



36

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Three Major Changes

- 1. Research Plan (Research Project Grants)**
  - Specific Aims
  - Research strategy
    - Significance
    - Innovation
    - Approach
- 2. Biographical Sketch**
  - Personal statement
  - 15 publications
- 3. Resources**
  - Environment

37

---

---

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Restructured Applications

- 1. Research Plan (Research Project Grants):**
  - Specific Aims**
    - ✓ Separate section/generally **one page**
    - ✓ New language about the **impact** of the proposed research
  - Research Strategy** (new section, three parts)
    - ✓ Significance
    - ✓ Innovation
    - ✓ Approach

**Incorporate as appropriate:**

- **Preliminary Studies** for New Applicants
- **Progress Report** for Renewal & Revision Applications

38

---

---

---

---

---

---

---

---

---

---

---

---

National Institute of Dental  
and Craniofacial Research

### Restructured Research Plan

Introduction

**Specific Aims**

**Background and Significance**

**Preliminary Studies/Progress Report**

**Research Design and Methods**

Inclusion Enrollment Report

Progress Report Publication List

Human Subjects Sections....  
protections, women/minorities, enrollment, children

Other Research Plan Sections....  
animals, select agent, MPI, consortium, support, sharing

Appendix

**\*NEW\***

**Research Strategy**

- Significance
- Innovation
- Approach

39

---

---

---

---

---

---

---

---

---

---

---


---



 National Institute of Dental and Craniofacial Research

### Align Application with Review Criteria

Scored Review Criteria	Application
Significance	Research Strategy <b>a. Significance</b>
Investigator(s)	Biographical sketch <b>Personal Statement</b>
Innovation	Research Strategy <b>b. Innovation</b>
Approach	Research Strategy <b>c. Approach</b>
Environment	<b>Resources</b> Environment

  43

---

---

---

---

---

---

---


---

---

---

---



---

 **Shortened Applications** National Institute of Dental and Craniofacial Research

### Changes effective for due dates on or after January 25, 2010

- ✓ Focus both applicants and reviewers on the essentials of the science rather than the administration of applying
- ✓ Enable a larger number of reviewers to read each application and participate in the review in a more informed manner
- ✓ Avoid information overload
- ✓ Lessen burden on reviewers and applicants

**Table of Page Limits:**  
[http://enhancing-peer-review.nih.gov/page\\_limits.html](http://enhancing-peer-review.nih.gov/page_limits.html)

  44

---

---

---

---

---

---

---


---

---

---

---

---

 **TABLE OF PAGE LIMITS** National Institute of Dental and Craniofacial Research



[http://enhancing-peer-review.nih.gov/page\\_limits.html](http://enhancing-peer-review.nih.gov/page_limits.html)

### Enhancing Peer Review at NIH

Peer Review Home  
Implementation Goals  
Engage the Best Reviewers  
Improve the Quality & Transparency of Review  
Ensure Balanced and Fair Review  
Continuous Review of Peer Review  
Policy Announcements  
New Scoring System  
Shortened/Restructured Applications  
Guidance for Reviewers  
Training & Communications Resources  
Inquiries

**Table of Page Limits**  
Changes effective for due dates on or after January 25, 2010  
Most sections that have page limits are listed below. Be sure to check the Funding Opportunity Announcement (FOA) for exceptions.

Section of Application	Activity Codes	Page Limits *
Introduction to Revision Application	For all Activity Codes	1 page
Introduction to Resubmission Application	For all Activity Codes, EXCEPT Training T, D43, D71, K12, and R25 applications	1 page
Introduction to Revision or Resubmission Applications	For institutional Training (T), International Training (D43, D71), Institutional Career Awards (K12), and Research Education Applications (R25)	3 pages
Specific Aims	For each project and core of multi-component applications	1 page
	For all Activity Codes that use an application form with the Specific Aims	1 page

  45

---

---

---

---

---

---

---


---

---


---

---

---


 National Institute of Dental and Craniofacial Research

### Enhancing Peer Review at NIH



<http://enhancing-peer-review.nih.gov>

- ✓ Timelines
- ✓ Status
- ✓ Related Policy Changes
- ✓ Frequently Asked Questions
- ✓ Training and Communication Resources

 46

---

---

---


---

---


---

---

---


 SF424 (R&R) Applications National Institute of Dental and Craniofacial Research

### Error Correction Window Elimination



**Beginning with due dates on or after January 25, 2011**

- NIH will eliminate the error correction window from the application electronic submission process.
- All applications submitted after 5 p.m. local time of the applicant organization on the due date will be subject to the NIH late policy and may not be accepted for review.
- Applicants should **SUBMIT EARLY** to allow time to make any necessary corrections and view the application before the submission deadline.

 **NOT-OD-10-123** 47  
August 16, 2010

---

---

---


---

---


---

---

---

 National Institute of Dental and Craniofacial Research

### New Announcements




[NOT-OD-10-115](#) 07/23/2010

**Enhancing Peer Review: New NIH Policy on Post-Submission Application Materials**

Applications submitted to the NIH for the September 25, 2010 due date and thereafter

[NOT-OD-10-093](#) 05/07/2010

**NIH Expands Provisions of the Streamlined Noncompeting Award Process (eSNAP) and Requires Electronic Submission of SNAPs Beginning August 1, 2010**

 48

---

---

---


---

---


---

---

---

 National Institute of Dental  
and Craniofacial Research

**Resources and Information**




**NIH Office of Extramural Research**  
<http://grants.nih.gov/grants/oer.htm>

**Enhancing Peer Review at NIH**  
<http://enhancing-peer-review.nih.gov/>

**NIH Peer Review Policies and Practices**  
<http://grants.nih.gov/grants/peer/peer.htm>

**Contact Information:**  
Lynn Mertens King, PhD  
Chief, Scientific Review Branch, NIDCR, NIH  
lynn.king@nih.gov

---

---

---

---

---

---

---

---

---

---