

The Review Process

Damali Martin, PhD, MPH
Program Director, Genomic Epidemiology Branch
Epidemiology and Genomics Research Program
Division of Cancer Control and Population Sciences
National Cancer Institute

Presentation Outline

- The review process and criteria
- The role of the program director and the reviewers
- Tips for the applicants
- Funding selection process
- Final reflections

The Review Process and Criteria

Peer Review Policy Overview

- To ensure objectivity, fairness, confidentiality, maximum competition
- Overseen by the NIH Office of Extramural Research
- **Two-tier peer review process**
 - First level by Scientific Review Group
 - ✓ Evaluates scientific impact and scores application
 - Second level by an Institute/Center Advisory Council
 - ✓ Approves meritorious grant applications for NCI funding consideration and considers special issues
 - ✓ Example: National Cancer Institute's National Cancer Advisory Board

Review Criteria (Scored Items)

Overall Impact

- Reviewers will provide an overall impact/priority score to reflect their assessment of the likelihood for the project to exert a ***sustained, powerful*** influence on the research field(s).

Significance

- Does the project address an important problem or a critical barrier to progress in the field?

Investigator(s)

- Are the PD/PIs, collaborators, and other researchers well suited for the project?

For more information on review criteria:

http://grants.nih.gov/grants/peer_review_process.htm#scoring2

Review Criteria (Scored Items)

Innovation

- Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?

Approach

- Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?

Environment

- Will the scientific environment in which the work will be done contribute to the probability of success?

For more information on review criteria:

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Additional Review Criteria

Score-Influencing Items

- Protections for Human Subjects
- Inclusion of Women, Minorities, and Children
- Vertebrate Animals Protection
- Biohazards
- Resubmission, Renewal, Revision

Non-Scored Items (*but still needs to be addressed*)

- Applications from Foreign Institutions
- Resource / Data Sharing Plans
- Budget and Period of Support
- Authentication of key biological and / or chemical resources

Scoring

Overall Impact or Criterion Strength	Score	Descriptor
High	1	Exceptional: Exceptionally strong with essentially no weaknesses
High	2	Outstanding: Extremely strong with negligible weaknesses
High	3	Excellent: Very strong with only some minor weaknesses
Moderate	4	Very Good: Strong but with numerous minor weaknesses
Moderate	5	Good: Strong with at least one moderate weakness
Moderate	6	Satisfactory: Some strengths but also some moderate weaknesses
Low	7	Fair: Some strengths but at least one major weakness
Low	8	Marginal: A few strengths but a few major weaknesses
Low	9	Poor: Very few strengths but many major weaknesses

Scoring

- Assigned reviewers enter their official scores for each criterion and an overall impact score on the vote sheet.
- Other reviewers give an overall impact score - each member marks scores privately assigning a whole number from 1 (best) to 9 (worst).
- At the end of the meeting, the scientific review officer (SRO) collects vote sheets and adds the scores.
- To create a raw overall impact score
 - Scores are averaged and rounded mathematically to one decimal place, e.g., a 1.34 average yields 1.3.
 - That number is multiplied by 10 to yield an overall impact score; in the example above, it would be 13.
- Percentiles are determined by matching an application's overall impact score against a table of relative rankings containing all scores of applications assigned to a study section during the three last review cycles.

Peer Review Process

- The Scientific Review Officer distributes the applications to reviewers based on area of expertise
- Reviewers read and score each application and application scores are submitted
- In the review meeting, only the top scoring half (~50%) of the applications are discussed and will receive an overall impact score/percentile
- It is possible for scores to change during the review discussion
- Lower scoring half of the applications are not discussed – these applications will not receive an overall impact score
- All applicants will receive a summary statement ~4 – 6 weeks after the end of the review session

Peer Review Process at the National Cancer Institute

Approval by the National Cancer Advisory Board required before funding

- Open session – NCI Director’s update, etc.
- Closed session - second level peer review
 - Assesses quality of initial review of applications
 - Considers staff recommendations for special actions (e.g. appeals)
 - Program Directors and Scientific Review Officers expected to attend, plus pre and post advisory board meetings

The Role of the Program Directors and Reviewers

Program Director and Review

Before review

- Recommend reviewers
- Letters of Intent
- Help instruct reviewers about programmatic intent (PAR, RFA)
- Awaiting Receipt of Application (ARA)- large budget applications

At the review

- Program Director Observes only

After the Review

- Feedback from applicants to review officer
- Resolve issues / grievances
- Summary Statement

The Reviewer: Roles and Responsibilities

- Responsible for scientific and technical review
- Reviews applications for completeness and conformance with application requirements
- Ensures fair and unbiased evaluation of scientific and technical merit
- Provides a summary of the evaluation after review
- Point of contact for applicants during the review process

The Reviewer: Roles and Responsibilities



- Average of 80 applications per review session
- Up to 16 personal assignments to be read and discussed
- 6 reviews to write and lead discussions on
- 4 weeks to get it all done
- 2 days away from home and the office
- Also working on his/her grant deadlines!!!

The Reviewer: Roles and Responsibilities



Do all reviewers get your application?

Do reviewers get only your application?

What are the implications for you?

Tips for Applicants

What Can You Do to Annoy the Reviewer?

- Play "hide and seek" with your hypotheses
- Too many specific aims
- “Dissertation” Background section
- “Lifetime research” Preliminary Studies section
- “Need a magnifier” font sizes
- Lack of white space – dense
- Subsections of subsections of subsections - Part I.A.2.b.i
- Poor basic writing skills
- Too many acronyms, abbreviations, and jargon
- Unintelligible / illegible figures

What Can You Do to Help?

- Be clear, concise, and neat
 - First and best impression
 - Follow instructions
 - Write for a qualified scientist in a related field
 - Continuous, compelling story
 - Provide the complete story
- If important, do not put in the appendices or cite as reference
 - Prior to submission, have your application reviewed by others especially someone who has been successful

For Reviewers Not Assigned to Your Application ...

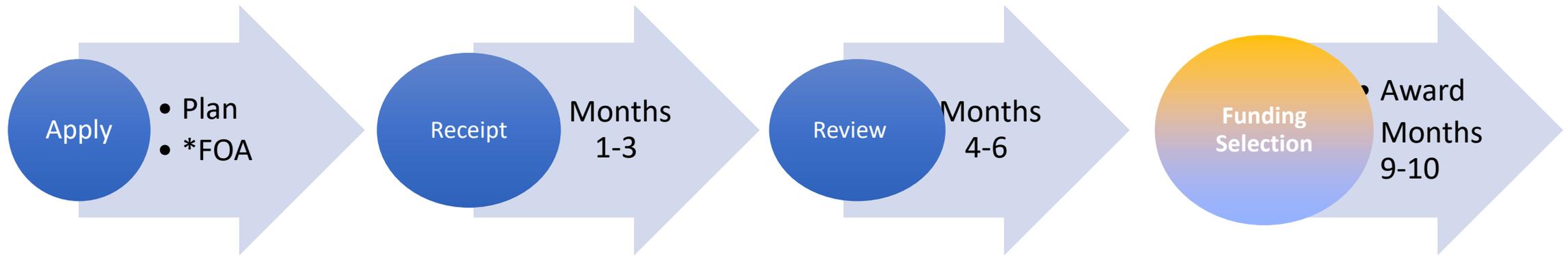
- Not likely to have read it before the meeting
- Special emphasis / focus on:
 - Abstract
 - Specific Aims/Hypotheses
 - Budget justification
 - Biographical sketches
 - Letters of support/collaboration

What Does a Successful Grant Proposal Look Like?

- ✓ Significant and innovative idea
- ✓ Focused hypotheses
- ✓ Logical specific aims related to the hypotheses
- ✓ Convincing preliminary studies in the right amount
- ✓ Innovative, appropriate methods
- ✓ Clear path to strong conclusions
- ✓ Reasonable budget

The Funding Selection Process

Funding Selection Process



*FOA: Funding Opportunity Announcement

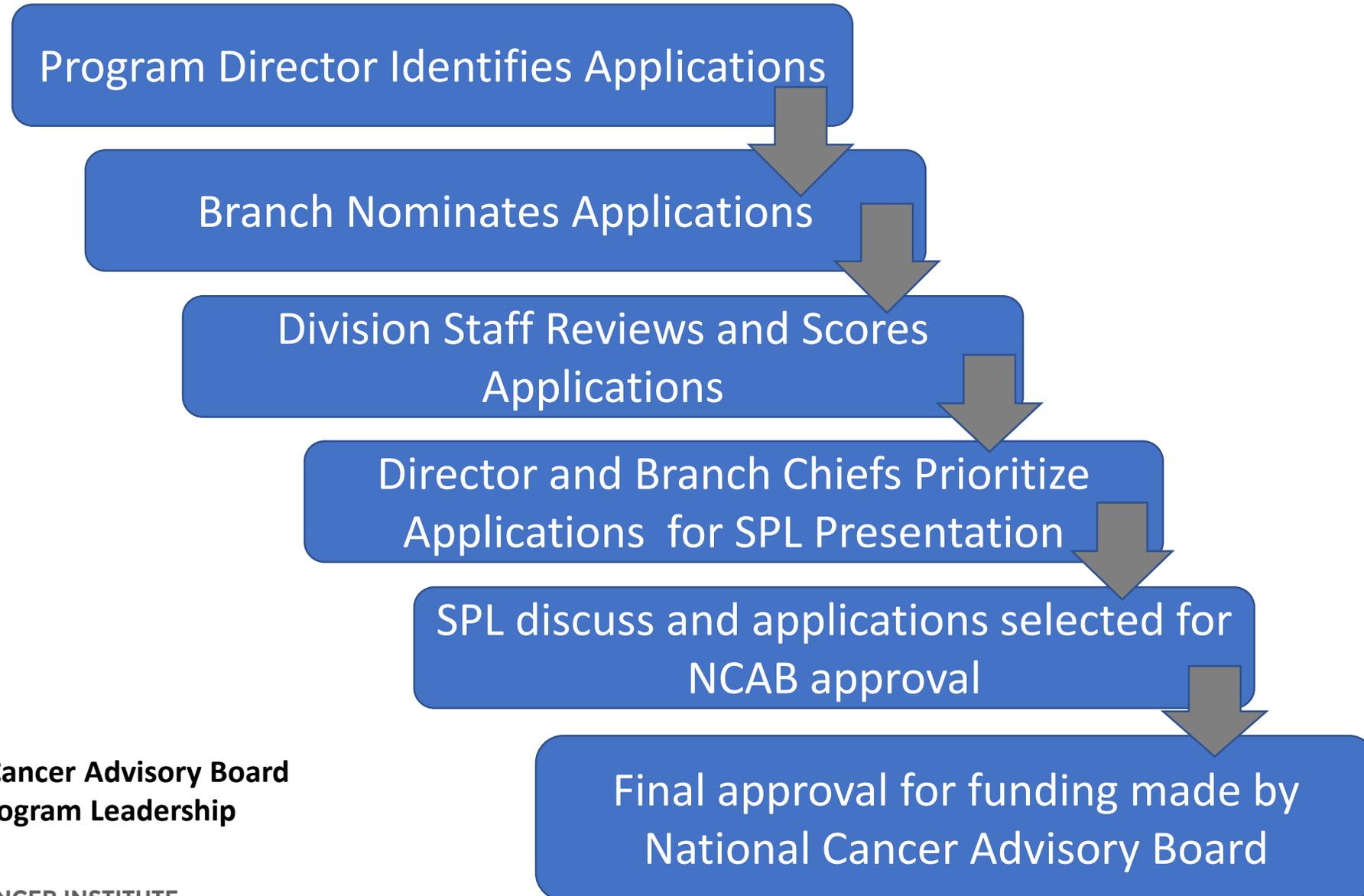
Two processes:

- via Fundable Range (NCI) [Payline]
- via Exception Process

How are funding decisions made?

- NCI will make funding decisions based on review scores AND the following criteria:
- Other things to keep in mind
 - Scientific priority of the proposed research
 - Fills a significant research gap or need
 - Significantly add to and/or expand existing funded research
 - Investigate questions addressing rare cancers
 - Focus on underserved and/or understudied populations
 - Have a 'NCI-level' competitive budget

Example: Exception Funding Selection Process at NCI



NCAB: National Cancer Advisory Board
SPL: Scientific Program Leadership

The Funding Selection Process

Final reflections

Consider serving on a review panel

- Allows you to gain insight in the review process
- Who Are We Looking For?
 - Have substantial and independent research experience
 - Have received major peer-reviewed grants (R01 or equivalent)
 - Understand the importance of the review process
 - Are dedicated to high quality, fair review
 - We also welcome individuals with diverse backgrounds to consider joining our review groups so that the panels are diverse with respect to geographic representation, gender, race, and ethnicity.

<https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR/BecomeanEarlyCareerReviewer>

Final reflections

How can the ECR program benefit your career?

- Help emerging researchers advance their careers by exposing them to experience in peer review that may make them more competitive as applicants
- Train and educate qualified scientists without prior CSR review experience to develop critical and well-trained reviewers
- Enrich the existing pool of reviewers by including scientists from less research-intensive institutions

<https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR/BecomeanEarlyCareerReviewer>

Final reflections

To qualify for the ECR program, you must:

- Have at least 2 years experience as a full-time faculty member or researcher in a similar role.
- Show evidence of an active, independent research program.
 - Examples include publications, presentations, institutional research support, patents, acting as supervisor of student projects.

<https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR/BecomeanEarlyCareerReviewer>

Final reflections

To qualify for the ECR program, you must:

- Have at least 2 recent senior-authored research publications in peer-reviewed journals in the last 2 years.
 - In press publications are considered and author position can be as single author, corresponding author, or first or last author.
- Have not served on a CSR study section in a role other than mail reviewer.
 - Review service at other agencies or at other NIH institutes/centers are not disqualifiers.
- Current funding is not required.

<https://public.csr.nih.gov/ForReviewers/BecomeAReviewer/ECR/BecomeanEarlyCareerReviewer>

Final Reflections

- The grants process has many steps!
- Interact with Program Director early and often
- Get advise from successful peers and mentors
- Become familiar with other institutes at the NIH
- Be clear, concise, complete, and proactive
- Don't take "it" personal
- Take a deep breath, regroup and recharge
- Revise and resubmit-persistent



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Principal Investigator	Application number	New or Established Investigator?	Preliminary Overall Impact Scores from the reviewers			Average Score
			Reviewer 1	Reviewer 2	Reviewer 3	
Dr. Jefferson	1AL10245-01	NI/ESI	1	2	3	2.00
Dr. Grant	1AL10252-01	NI	2	2	2	2.00
Dr. Williams	1AL10395-01	NI	3	3	2	2.66
Dr. Clinton	1AL10785-01	NI/ESI	3	3	4	3.33
Dr. Monroe	1AL12245-01	NI	3	4	4	3.66
Dr. Madison	1AL12249-01	EI	1	1	2	1.33
Dr. Adams	1AL10875-01	EI	1	2	2	1.66
Dr. Harrison	1AL19783-01	EI	2	2	3	2.33
Dr. Carter	1AL14523-01	EI	3	2	2	2.33
Dr. Tyler	1AL10786-01	EI	3	3	3	3.00
Dr. Taft	1AL16659-01	EI	3	4	4	3.66
Dr. Bush	1AL19753-01	EI	2	5	5	4.00