Enhancing Peer Review

The Study Section Chair as Effective Partner

Role and Best Practices

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National Institutes of Health

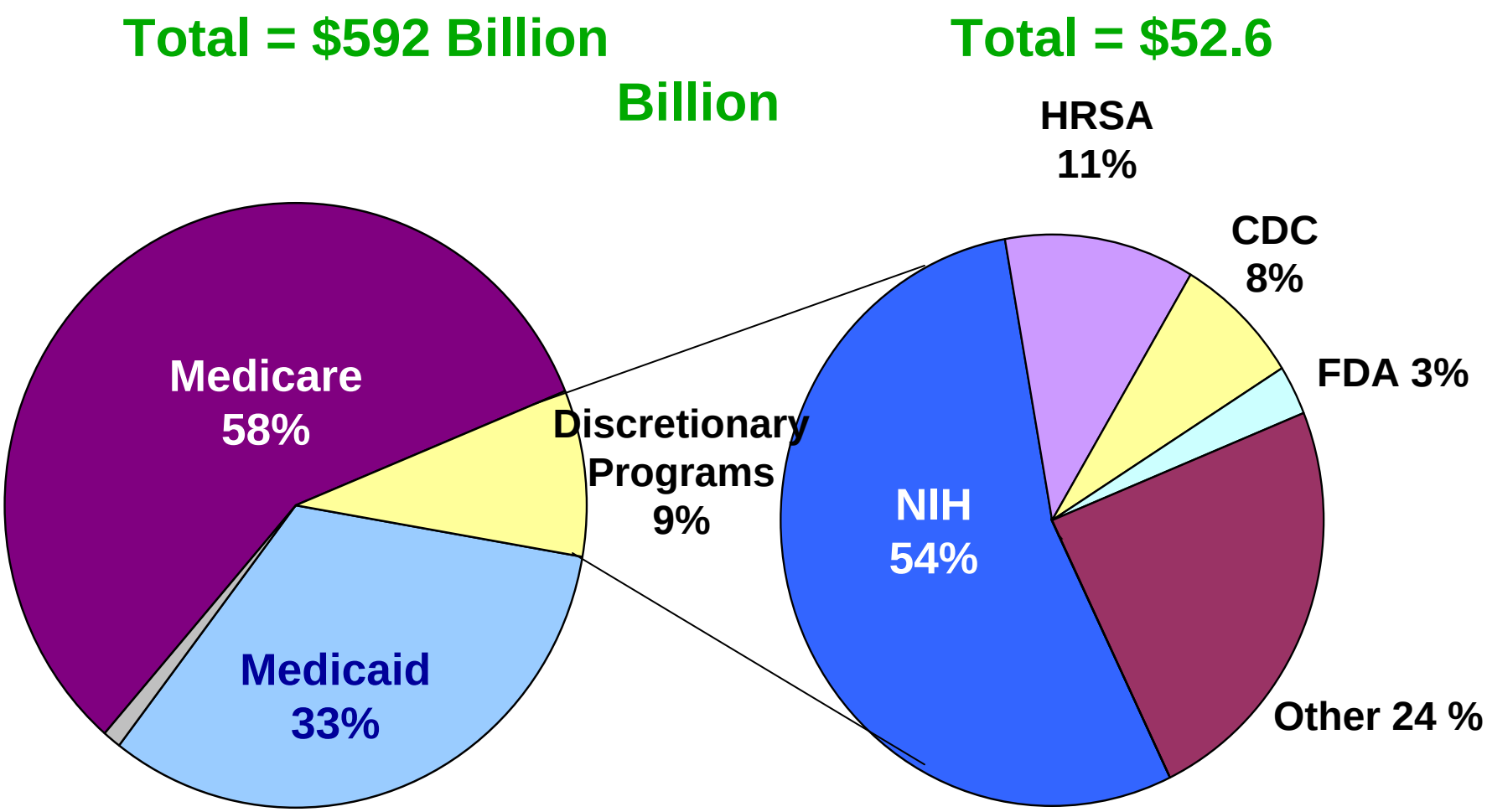
U.S. Department of Health and Human Services

NIH Peer Review

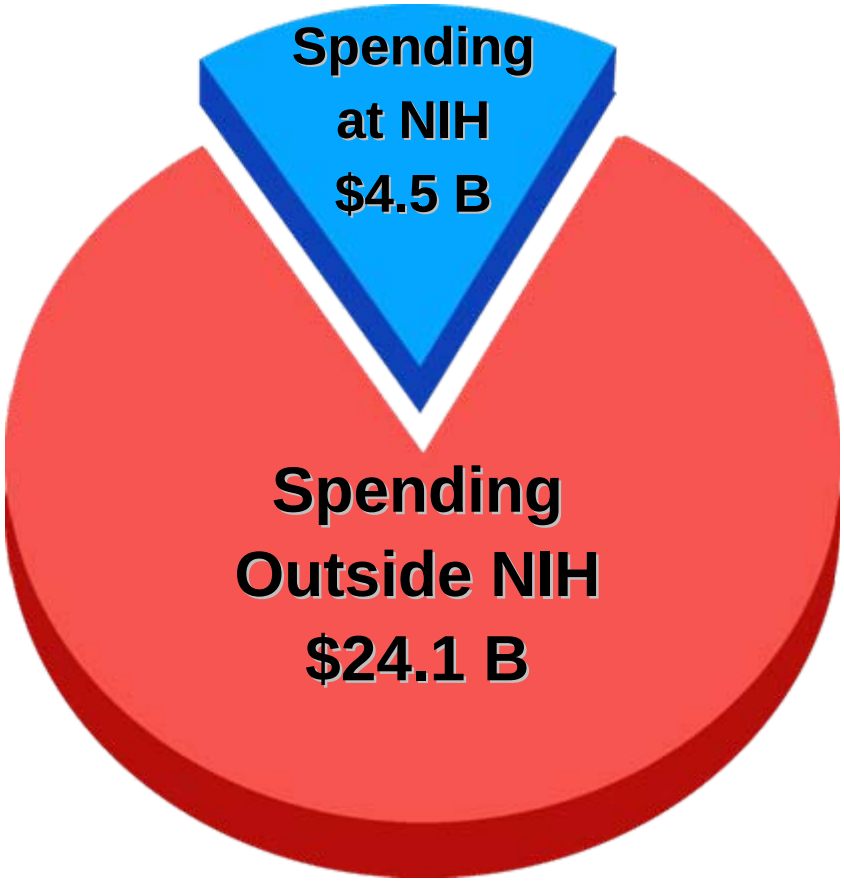
- NIH and Peer Review at CSR
- The Drivers for Change
- CSR's Efforts to Enhance Peer Review
- The NIH Director's Peer Review New Initiatives
- Best Practices for Chairs

NIH and Peer Review at CSR

Department of Health and Human Services



FY 2007 NIH Budget is $28.6 Billion



The Fundamental Tenets for NIH

1. **The only possible source for adequate support of our medical research is the taxing power of the federal government.**

2. **The federal government and politicians must assure complete freedom for individual scientists in developing and conducting their research work.**

3. **Reviews should be conducted by outside experts essentially without compensation.**

4. **Program management and review functions should be separated.**

The Basic Operating Principles of NIH Peer Review

NIH has ownership of the process

- The Scientific Review Officer , a full time federal employee, nominates the review panel, assigns applications and is responsible for the meeting

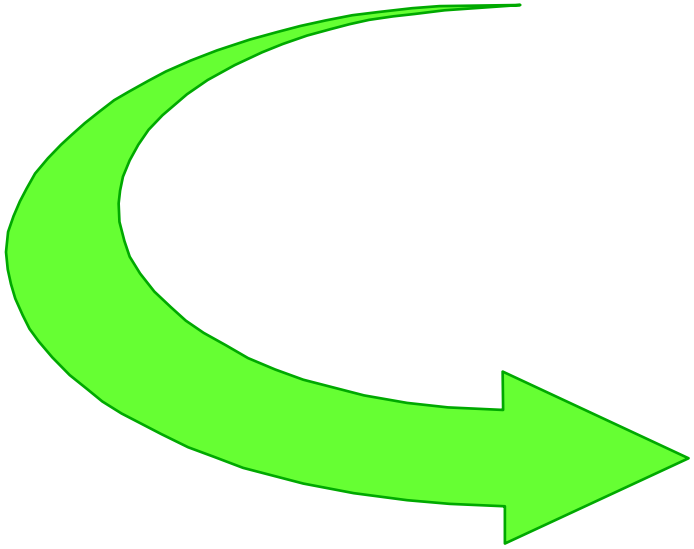
The study section (review panel) has ownership of the science.

- Is composed by the best and experienced scientists in the field. Usually 20 are permanent members, serving 4 years 3 times/year and 10 are ad hoc
- Hundreds of study sections reviewing different biomedical behavioral science

Dual Review System for Grant Applications

First Level of Review

Scientific Review Group (SRG)



Second Level of Review

NIH Institute/Center Council

CSR Mission Statement

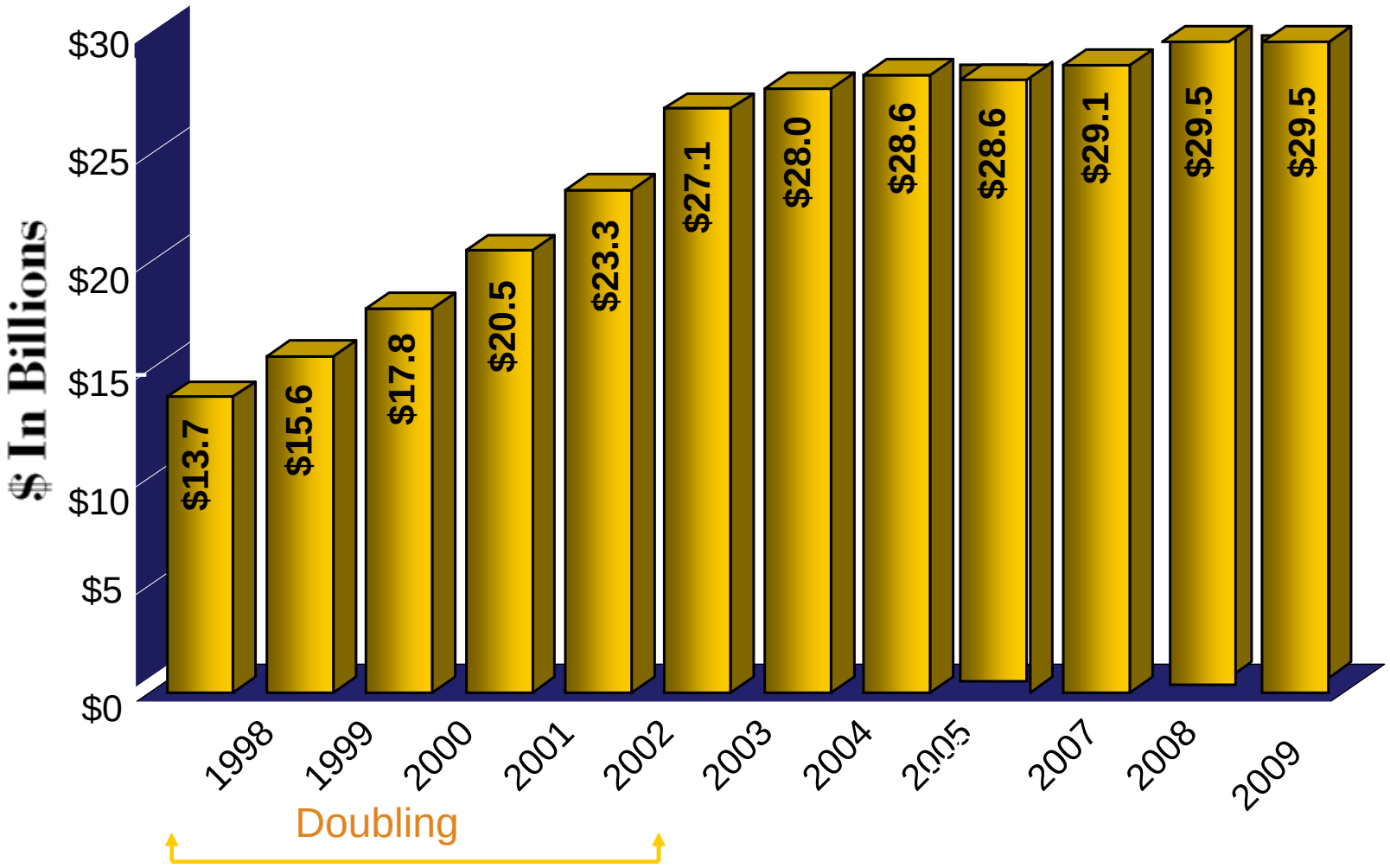
To see that NIH grant applications receive fair, independent, expert, and timely reviews – free from inappropriate influences – so NIH can fund the most promising research.

CSR Peer Review: 2008

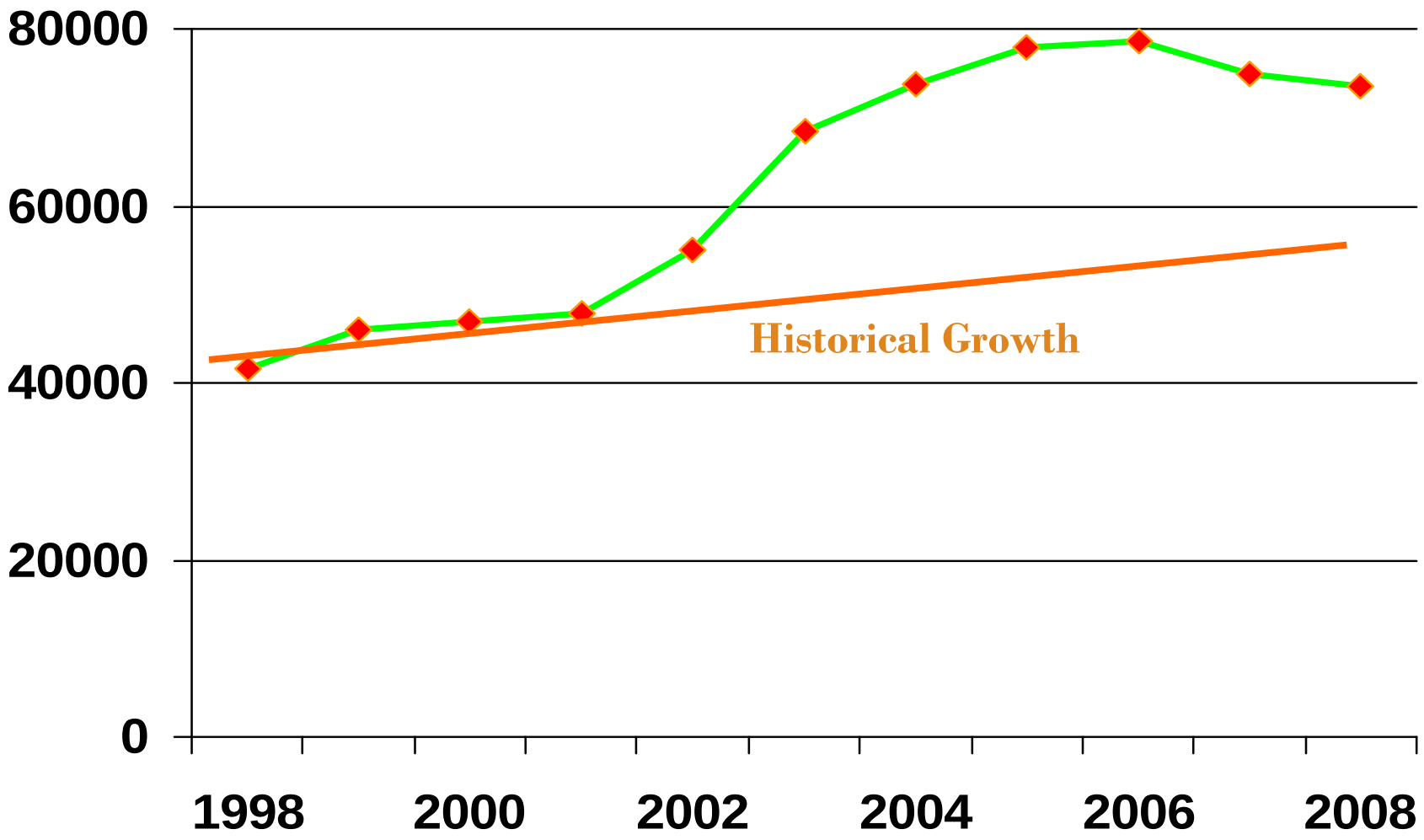
- 77,000 applications received
- 56,000 applications reviewed
- 16,000 reviewers
- 240 Scientific Review Officers
- 1,600 review meetings

The Drivers for Change

1st Driver: The NIH Budget

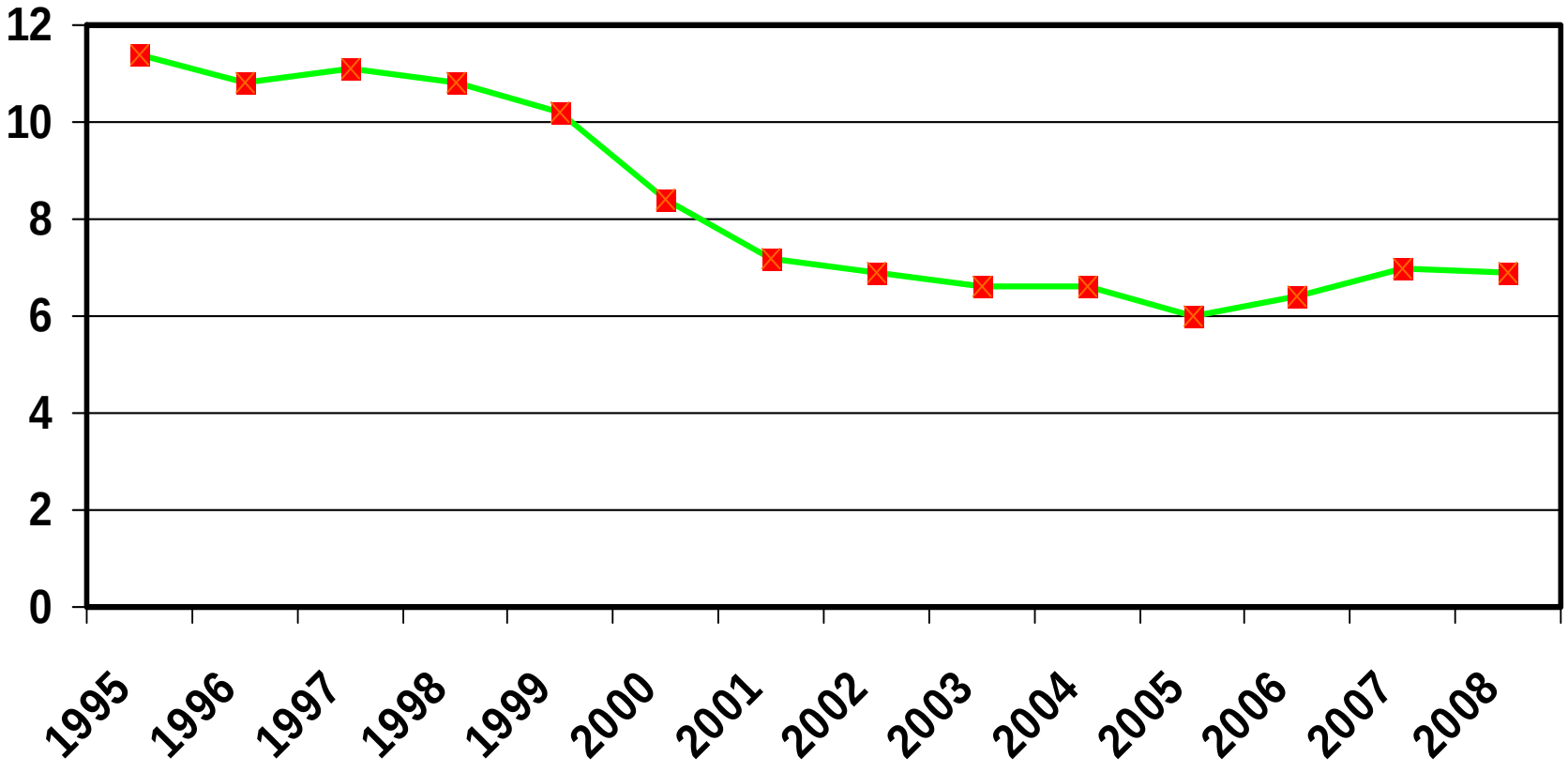


2nd Driver: Number of Applications Submitted



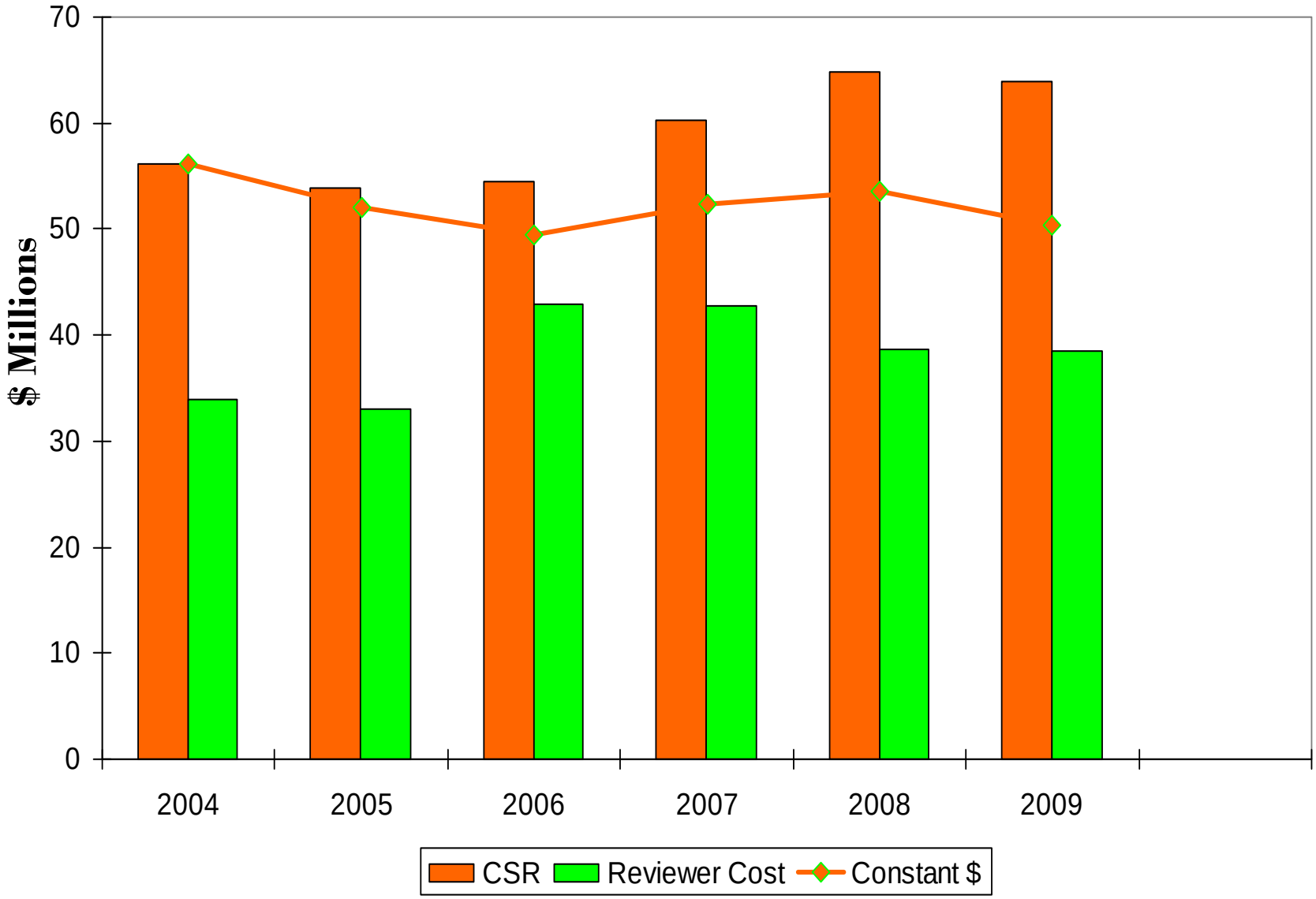
3rd Driver: Reviewer's Load

Applications
Per Reviewer



October Council Rounds

4th Driver: CSR Budget



Annual Savings in Reviewers' Expenses Budget

- Non-refundable tickets with one possible change
  - $15 million
- 3,000 fewer reviewers
  - $3 million
- 15% reviews using electronic platforms
  - $5 million
- One meeting a year on the West Coast
  - $1.8 million

5th Driver: One Review Platform for 62 years

The First NIH Study Section **The Last NIH Study Section**

1946 **2008**

CSR’s Efforts to Enhance Peer Review

CSR's Efforts to Enhance Peer Review

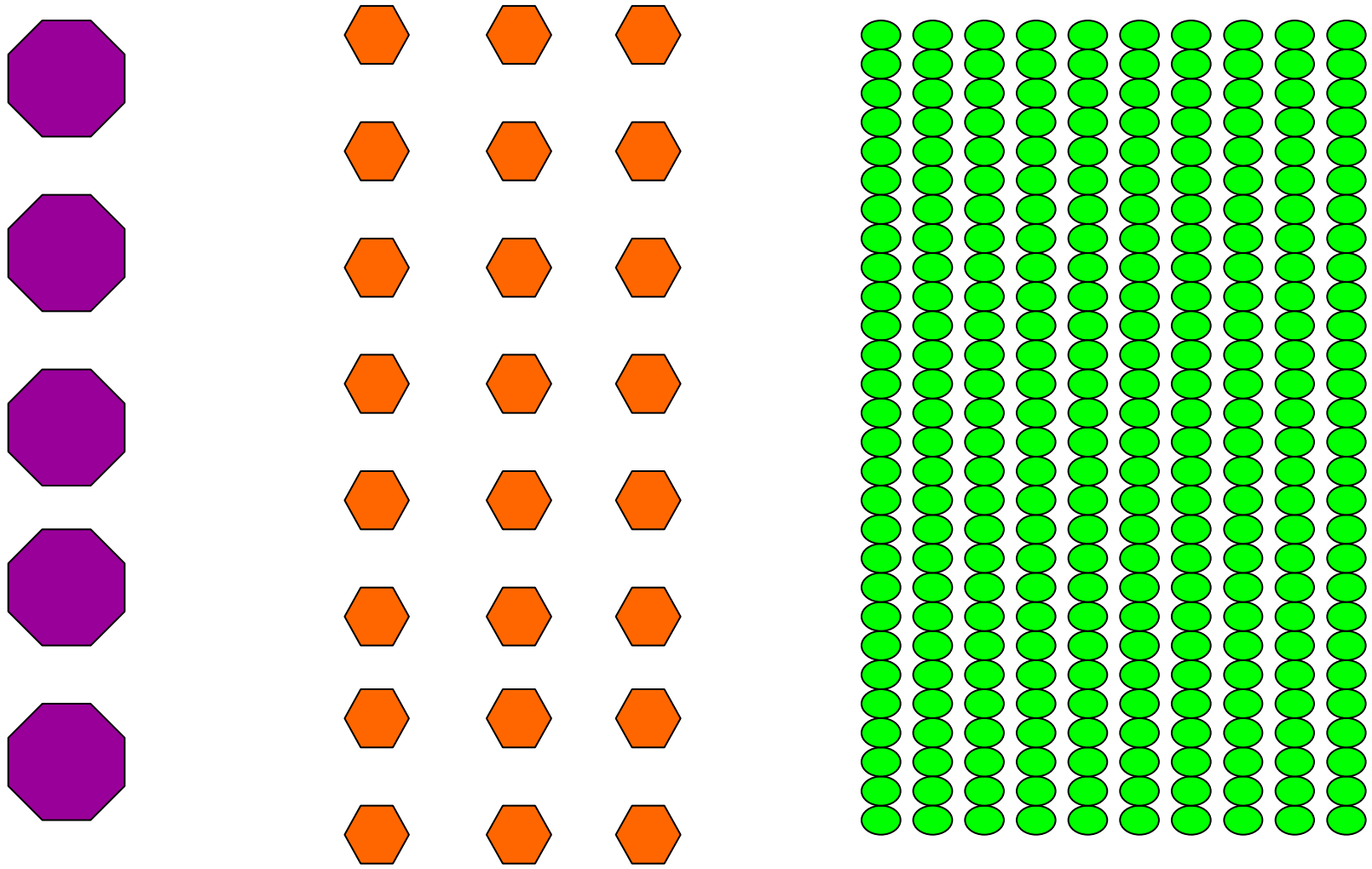
1. CSR Reorganization
2. Recruiting CSR Staff
3. Revising of Study Section Guidelines
4. Improving Study Section Alignment and Performance
5. Assigning Application more Accurately and Efficiently
6. Shortening the Review Cycle
7. Advancing Additional Review Platforms and Processes
8. Recruiting the Best Reviewers

1. New CSR Organizational Structure

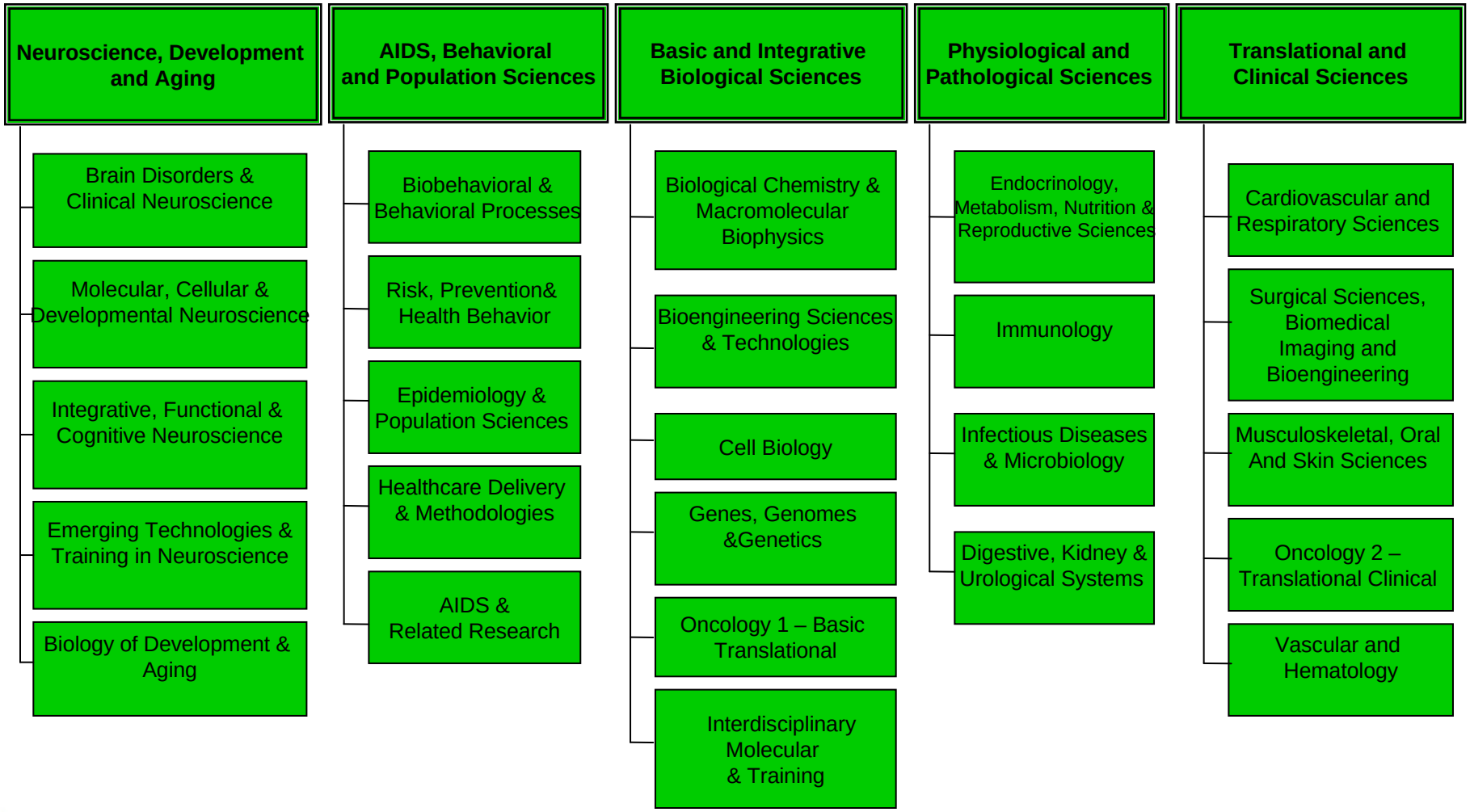
Divisions

Integrated Review Groups

Scientific Review Officers



1. CSR Reorganization as of January 2009



2. Recruiting of Scientific Staff

- 3 Division Directors
- 6 Integrated Review Group Chiefs
- 20 Scientific Review Officers

3. Revising Study Section Guidelines

- **Cellular Signaling and Regulatory Systems**

- **[Roster]**

- **The Cellular Signaling and Regulatory Systems (CSRS) study section reviews applications that focus on the initiation and execution of programs that control cellular homeostasis and physiology. A distinguishing characteristic of these applications is an emphasis on signaling networks and the coordination of processes related to cell proliferation, survival, and growth.**

- **Cell cycle regulation, mitosis, meiosis, checkpoint controls and regulation by ubiquitination**
- **Proteolytic mechanisms associated with cell cycle, senescence and death**
- **Programmed cell death and apoptosis, particularly their regulation in the context of stress, growth, and transformation.**
- **Proliferation and growth control by the nucleus; signaling pathways regulating transcription**
- **Integrative cell physiology, e.g., stress, clocks, cellular modeling; cell differentiation and transformation**
- **Basic studies of cytokine signaling**
- **Application of state-of-the-art technologies such as imaging and computational modeling of cellular signaling networks**

- **Study sections with most closely related areas of similar science listed in rank order are:**

- **Molecular and Integrative Signal Transduction**
- **Intercellular Interactions**
- **Membrane Biology and Protein Processing**
- **Molecular Genetics A**
- **Molecular Genetics B**

4. Improving Study Section Alignment & Performance

- Input from the community--ongoing
- Internal IRG reviews—every two years
- Open Houses—conducted in 2008
- Peer Review Advisory Council—twice yearly

5. Assigning Applications Accurately and Efficiently

Retooled for electronic submission

- **Applications are now submitted electronically**

Assign applications using text fingerprinting, and text mining programs

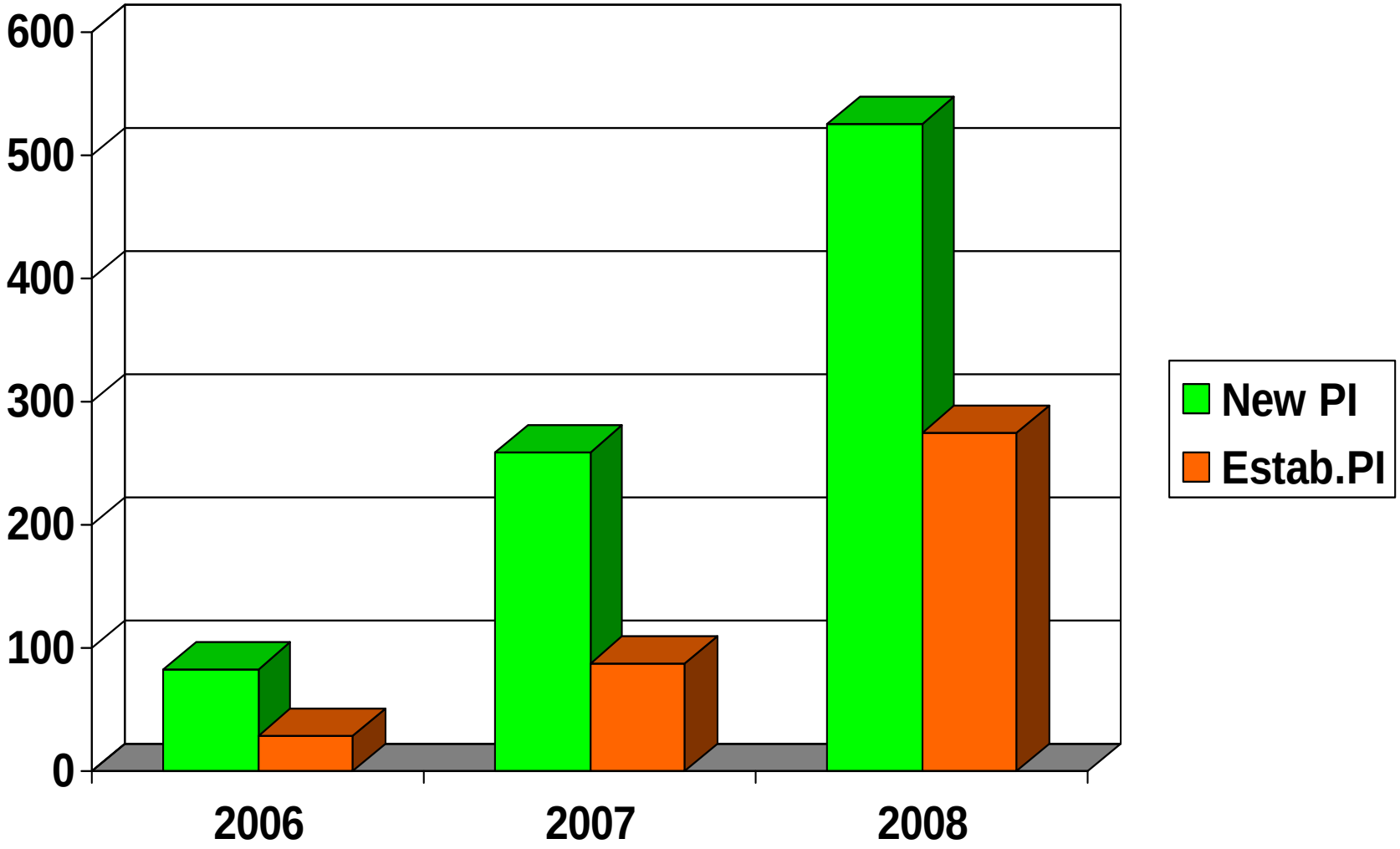
Full Implementation by early 2009

6. Shortening the Review Cycle

The Goal

- **To provide applicants a review and score within 3 months of application submission. This will permit resubmission of applications (when doable and desirable) 4 months earlier than in the past.**

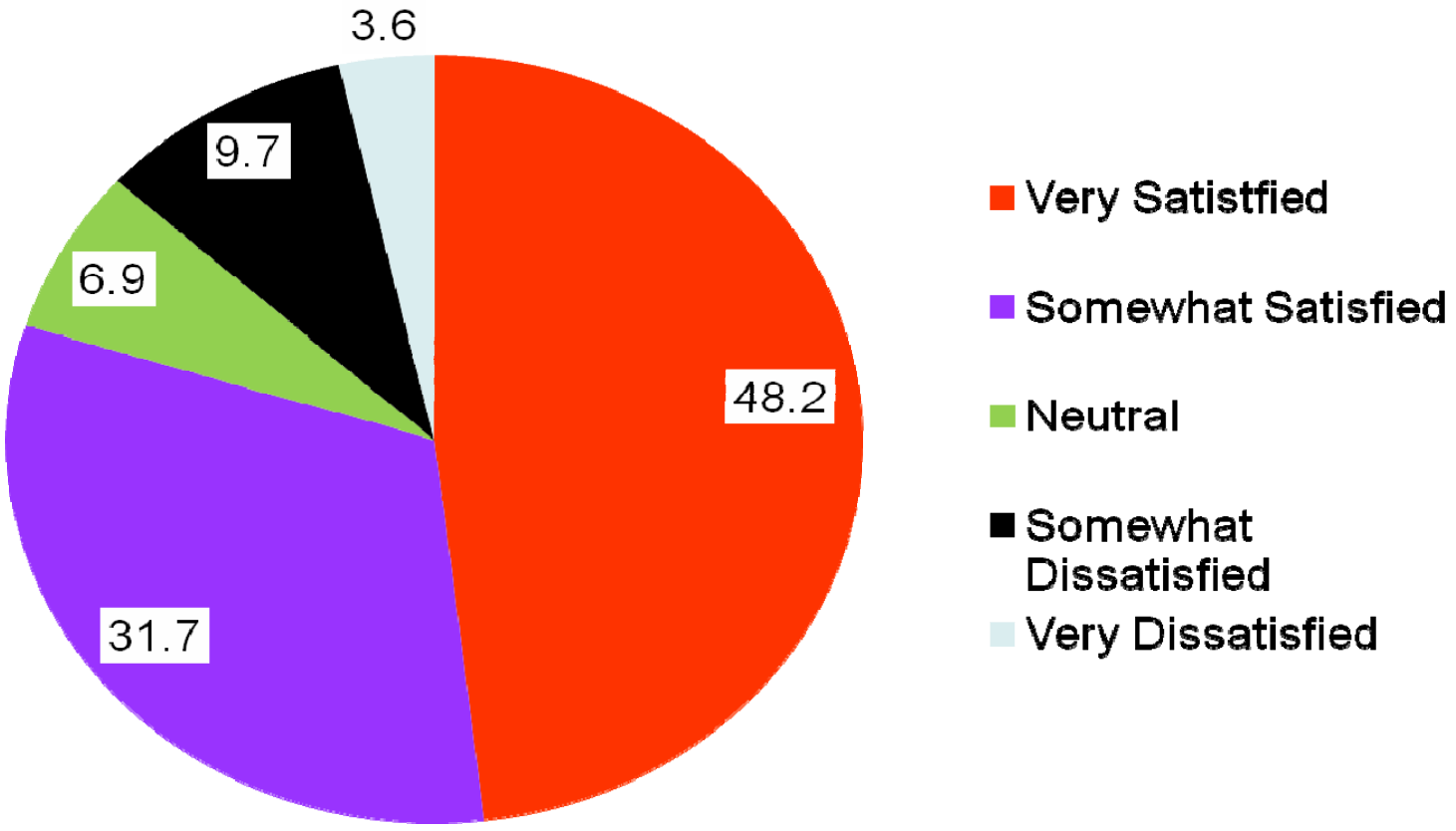
RO1 A1 Resubmission
Within 4 Months of Original Application



7. Advancing Additional Review Platforms and Processes

- **Additional Review Platforms Help recruiting Reviewers**
- **Electronic review modes reduce travel**
- **Electronic Reviews**
  - **Telephone Enhanced Discussions**
  - **Video Enhanced Discussions**
  - **Asynchronous Electronic Discussions**

7. Reviewer Satisfaction with AED Technology

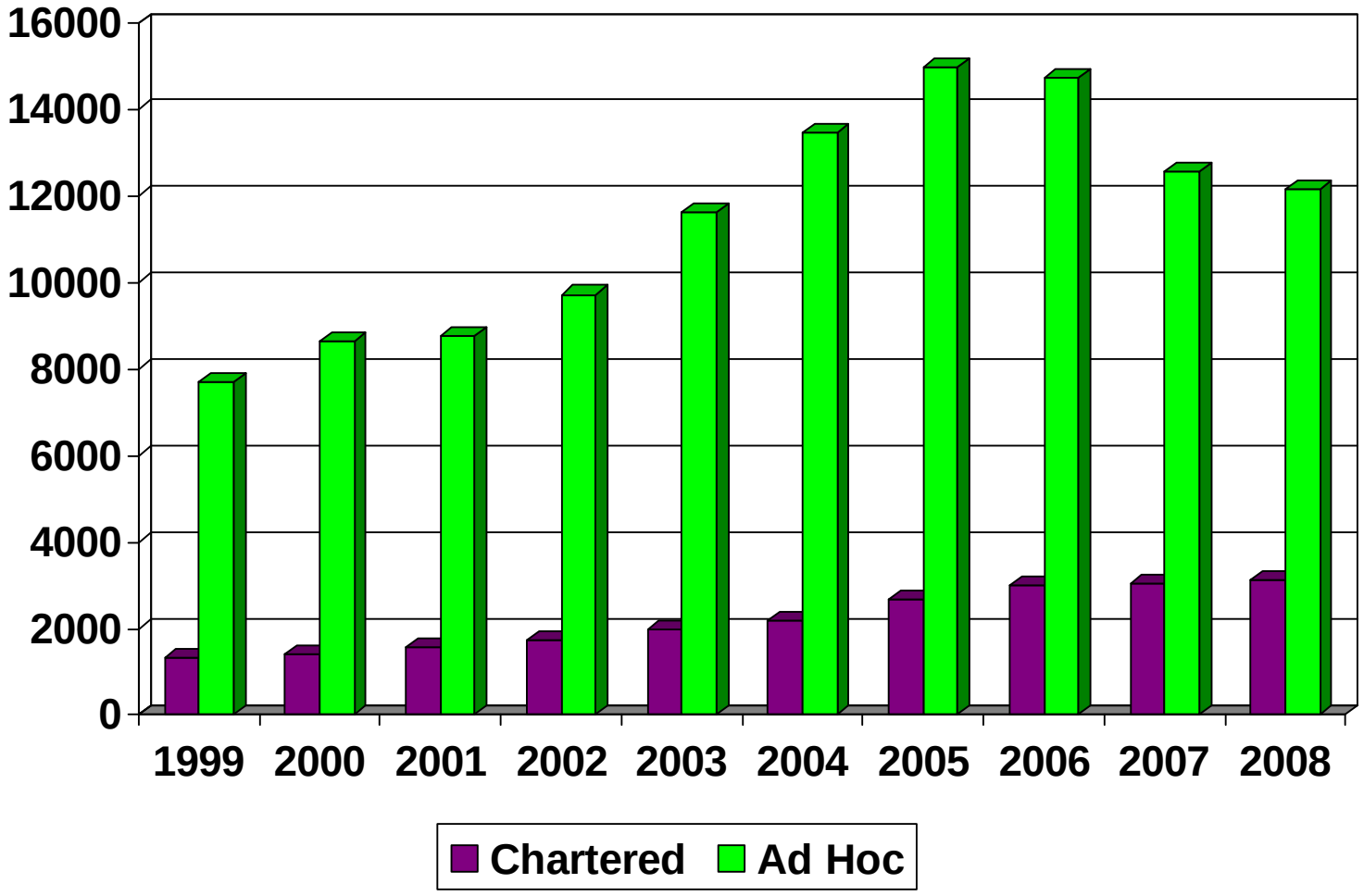


7. Cost Comparison of Review Platforms

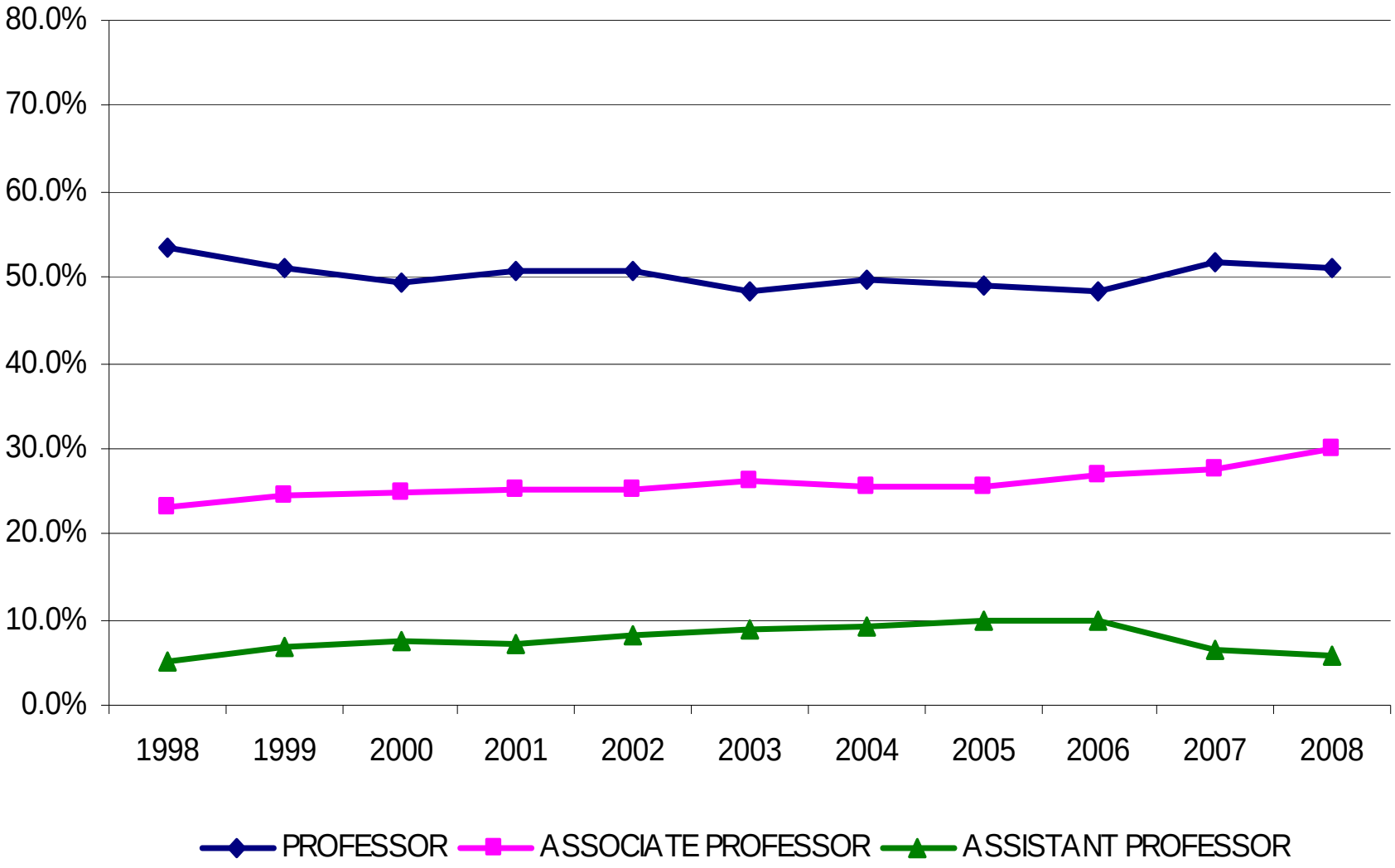
	Teleph	AED	VED	Face to Face
$ Cost/application	25	107	237	867
$ Cost/reviewer	31	100	292	1767

Not including honoraria for reviewers

8. Recruiting the Best Reviewers



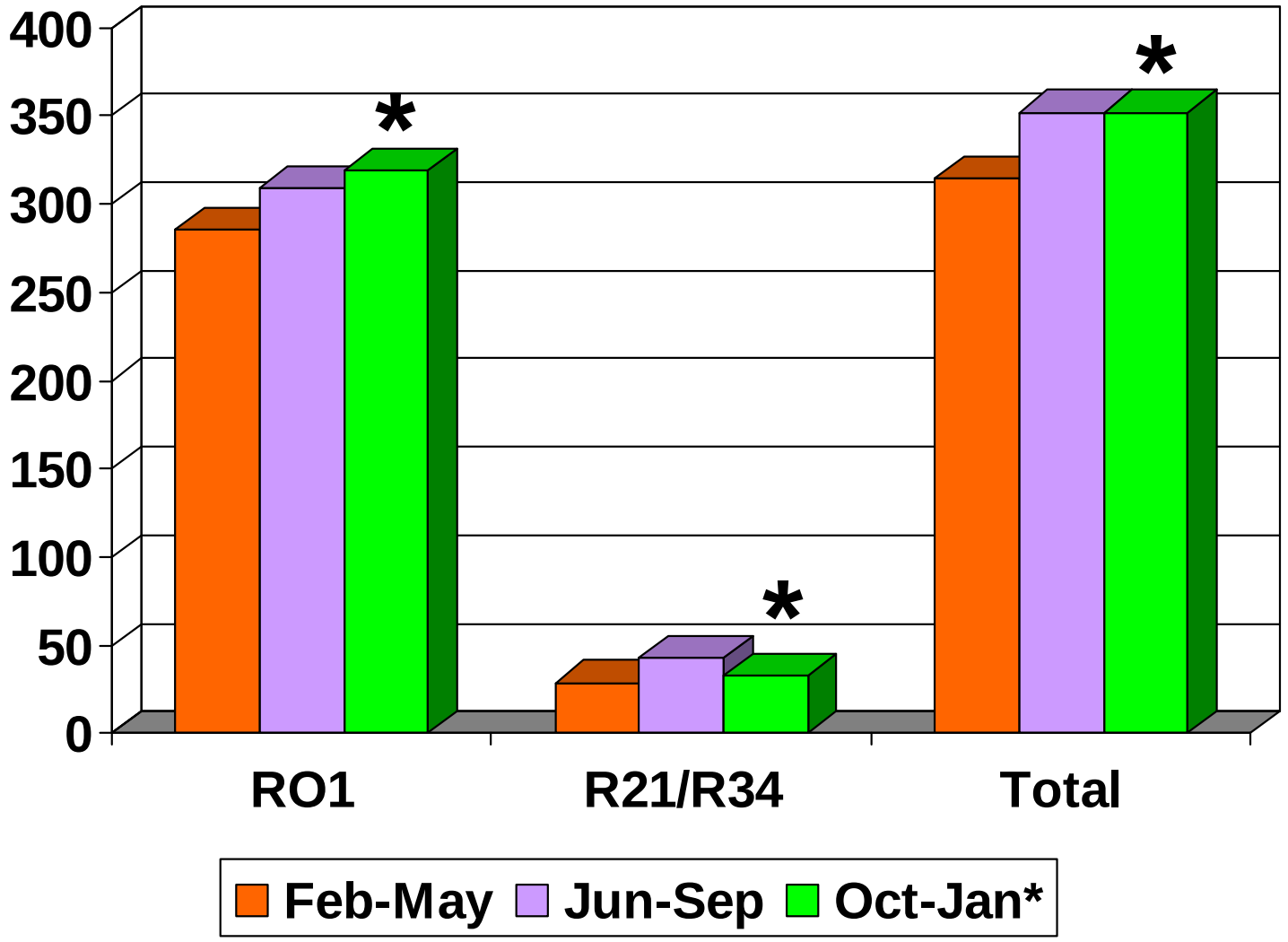
8. Academic Rank of ALL CSR Reviewers



8. Recruiting the Best Reviewers

- ✓ **Move a meeting a year to the West Coast**
- ✓ **Additional review platforms**
- ✓ **Develop a national registry of volunteer reviewers**
  - ✓ Searchable database with 4,000 reviewers
- ✓ **Provide tangible rewards for reviewers**
  - ✓ No submission deadlines for chartered members of study sections (effective February 2008).
- **Provide flexible time for reviewers**
  - ✓ Choice of 3 times/year for 4 years or 2 times/year for 6 years

10. Applications Submitted Outside of Deadlines



10. Expansion of No Submission Deadlines

- **Present (since Feb 2008)**
  - Chartered Study Section Members
    - CSR 3127
    - Other ICs 1012 4,139

- **Planned for 2009**
  - Frequent Reviewers* 1323
  - BSC regular members 260
  - NAC members 393 1, 976

* 6 meetings/last 18 months

The NIH Director's Peer Review Recommendations

Major Complaints About NIH Peer Review

- The process is too slow
- There are not enough senior/experienced reviewers
- The process favors predictable research instead of significant, innovative, or transformative research
- The time and effort required to write and review are a heavy burden on applicants and reviewers

Corporate NIH Enhancing Peer Review

Two advisory committees to the NIH Director

- **The Charge from Dr. Zerhouni:**

  "Fund the best science, by the best scientists, with the least administrative burden…"

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

The Process

Year-long Deliberative Effort Gathering Feedback & Input:

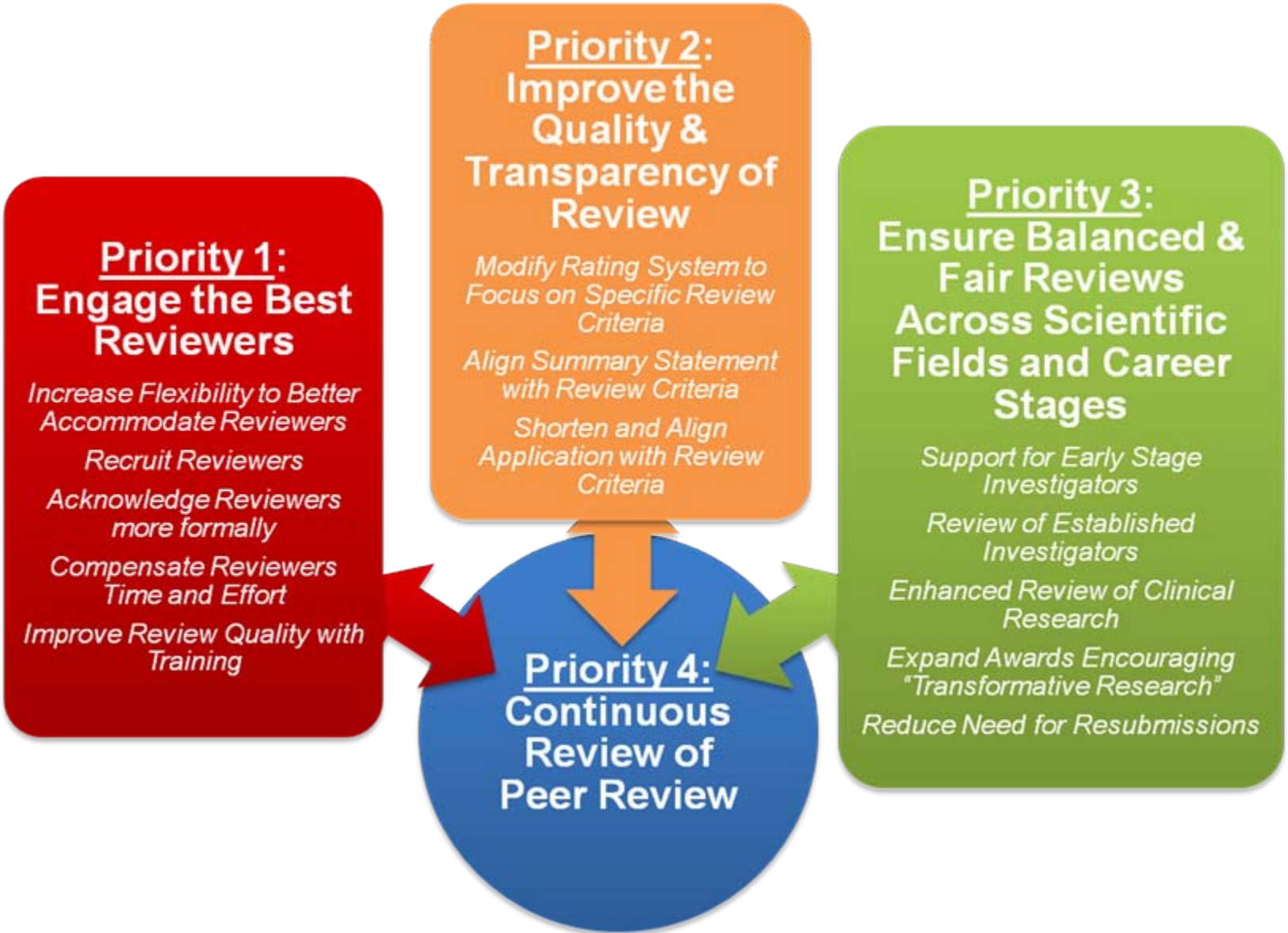
- Request for Information
- NIH Staff survey
- IC White Papers
- Internal Town Hall Meetings
- External Consultation Meetings
- Data Analysis
- Internal and External Working Groups

Identified Key Recommendations

Peer Review Oversight Committee (PROC) Established Working Groups:

1.Engage the Best Reviewers
2.Improve the Quality and Transparency of Review
3.Ensure Balanced and Fair Reviews Across Scientific Fields and Career Stages 4.Continuous Review of Peer Review

Summary of Recommendations



Enhancing Peer Review:

1. Highly transformative research
2. Fund the best research earlier and reduce the burden
3. Improve quality and transparency of peer review
4. Recruit and retain the best reviewers
5. Train chairs and reviewers
6. Continuous evaluation of all aspects of peer review

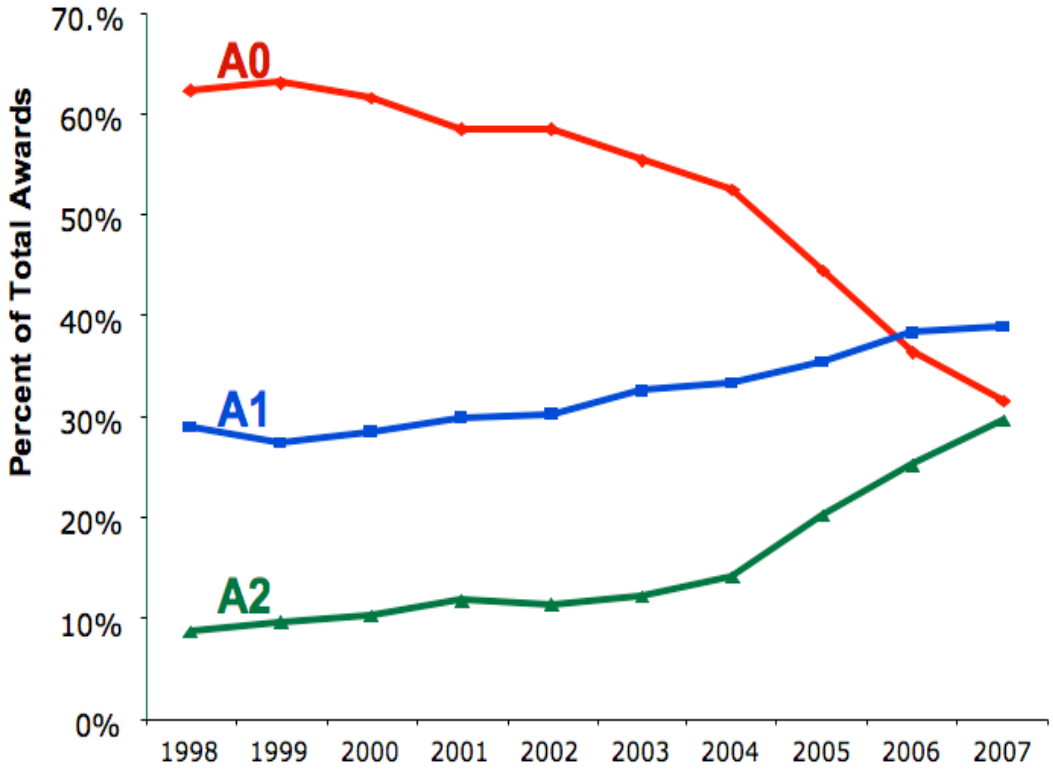
1. Review of Highly Transformative Research

- **OPASI Transformative RO1 (T-RO1)**
  - **Once a year, 5 years, $20-$40 million total budget**
  - **Deadline January 29, 2009**
  - **8-page application**

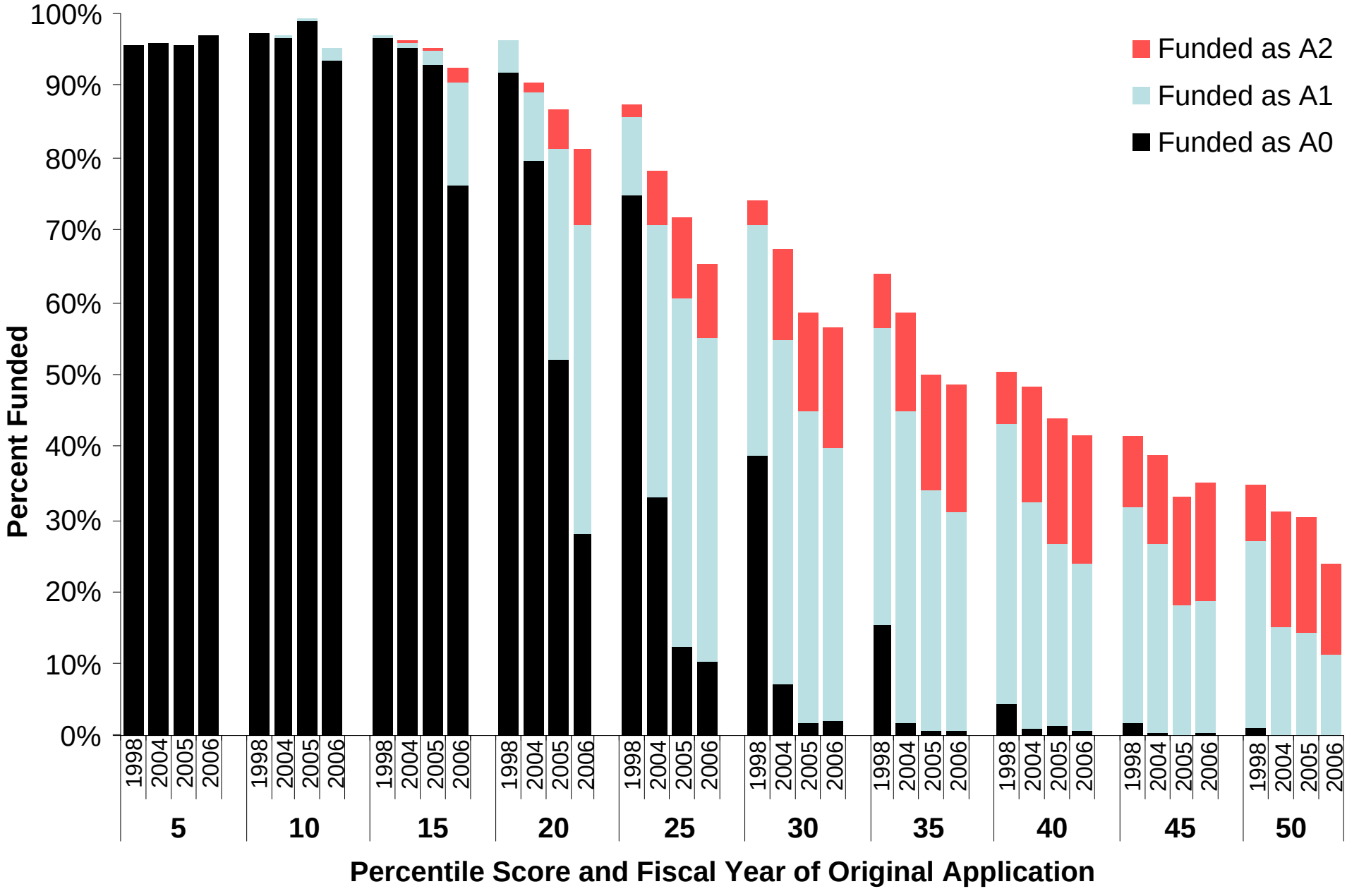
  - **Editorial Board Review**
    - Heavy triage based on innovation and potential science transformation by a small study section of distinguished, broad-science reviewers (the editors)
    - Specific science reviewed by appropriate reviewers (the editorial board)
    - Final ranking by the editors

2. Funding the best research earlier and reducing the burden on applicants, reviewers, institutions and NIH

- More flexible deadlines
- Abolish A2 applications



2. Percent of Type 1 R01 Applications Funded



3. Improve Quality and Transparency of the Peer Review Process

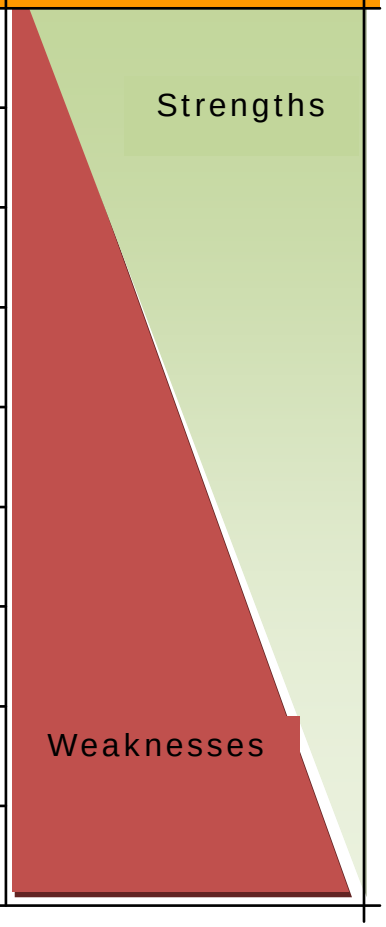
May-July meetings 2009

- **Shorten summary statements, follow template for each criteria**
- **Change the rating system**
  - Use 1-9 integers
  - Score each criteria
  - Provide score for all applications (even those not discussed)

Spring 2010

- **Shorten applications, aligning with review criteria**
  - Impact, investigator, innovation (if applicable), research strategy, facilities

3. New Scoring

	Overall Impact Score		Guidance on weighing strengths and weaknesses
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	

Non-numeric score options: NR = Not Recommended for Further Consideration, DF = Deferred, AB = Abstention, CF = Conflict, NP = Not Present.

4. Recruit and Retain the Best Reviewers

- **Flexibility to serve: option to decrease the commitment to twice yearly by serving 6 years**
- **Tangible rewards for reviewer service**
- **Improve quality with training**
  - **All the SROs**
  - **All Chair**
  - **Reviewers**

Best Practices for Chairs

Ownership

- **Ownership of the Review**
  - The Process: NIH
  - The Science: You and Study Section Members
- **Ownership of the Application**
  - CSR from receipt to posting of Critiques
  - Institutes/Program after

The SRO and the Program Officer

- **The Scientific Review Officer (SRO)**
  - 240 SROs in CSR
  - More Senior
  - More Uniformity
- **Main Role of SRO**
  - Nomination for Slates and Chair
  - Selection of Ad Hoc Reviewers
  - Assignment
  - Follow the law, the rules and the regulations
- **The Program Officer**
  - Role before and during review
  - Conflict
  - The Importance of Telephones and Microphones

Best Practices of Effective Chairs

- The Assignment for Chairs
- Before the Meeting
  - Possible Review Problems
  - Posting Critiques by the Deadline
  - No Corridor Discussion and Deals

- During the Meeting
  - Impact
  - Critique more than Mentoring
  - Consistency of Scores
  - Out of Range Scoring
  - Consensus should not be forced
  - Time Management
  - Inappropriate Statements
  - Recap and Summary

What You Could Tell in February-March

- Changes are coming for next meeting (May-June 2009):
- Scores 1-9 (integers only)
- Vote for each criteria
- Shorter Summary Statement, with boxes for each criteria
- Discussion of new investigators first
- Scores of individual criteria given to all applicants
- Most likely the order of discussion

- Changes occurring in 2010:
- Shorter application (12 page for RO1) designed to match scoring criteria

Enhancing Peer Review Training

- CSR and NIH Review Staff
  - 6 face to face training sessions, January 2009
  - 6 face to face training sessions, April 2009
  - Continuous training

- Chairs
  - For Chairs appointed in 2008, sessions in January 2009
  - For Chairs appointed in 2009, sessions in July 2009

- Reviewers
  - Training material (power point, interactive training, frequently asked question, mock study section video, etc) in April-May 2009
  - Senior CSR staff at the first meeting in May-July 2009

Useful Links

- **The major link, weekly updated** http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-023.html
- **Recruitment of Chairs, Best practices** http://cms.csr.nih.gov/CSRIRGReview/BBBPIRG/ChairSelectionandOrientation.htm
- **Early Stage Investigators** http://grants.nih.gov/grants/guide/notice-files/NOT-OD-09-034.html
- **New vs. revised application** http://enhancing-peer-review.nih.gov/policy_announcements.html

This is CSR

September 2008