Internal Review of Grant Applications for New and Early Stage Investigators

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Introduction

Due to increased difficulty in obtaining NIH funding, especially for new and early stage investigators, in 2011 the Department of Neurology at Johns Hopkins University implemented an internal review program. The program is led by an internal review committee consisting of a research administrator and seasoned investigators. The program has two main parts: 1) Oral presentation with in-person feedback, and 2) Anonymous review of grant application and evaluation.

Objectives

Objective 1: Assist new and early stage investigators throughout the grant submission process through internal review.

Objective 2: Improve the departmental funding rates for new and early stage investigators submitting K- and R-type grant applications.

Methods

**TIMELINE FOR INTERNAL GRANT REVIEW PROCESS**

- **14 weeks prior to NIH due date**
  - K/R Committee notifies the department that the next cycle of internal reviews begins in 4 weeks.
  - K/R Committee requests new and early stage investigators to respond with their intent to go through the internal review process.
  - K/R Aims Presentations (oral presentations / audience feedback)
  - Committee review of draft specific aims and biosketch
  - Internal reviewers based on expertise are selected and asked to review application anonymously
  - Applicant’s materials are due for internal review
  - Application materials are sent to internal reviewers anonymously, and are given 7 days to review and complete the NIH-style evaluation form
  - Internal reviewers submit the completed NIH-style evaluation form with scores and comments. All evaluations are provided to the applicant anonymously with scores and comments.

**Methods (cont’d)**

- **5 weeks prior to NIH due date**
  - K/R Committee notifies the department that the next cycle of internal reviews begins in 4 weeks.
  - K/R Committee requests new and early stage investigators to respond with their intent to go through the internal review process.
  - K/R Aims Presentations (oral presentations / audience feedback)
  - Committee review of draft specific aims and biosketch
  - Internal reviewers based on expertise are selected and asked to review application anonymously
  - Applicant’s materials are due for internal review
  - Application materials are sent to internal reviewers anonymously, and are given 7 days to review and complete the NIH-style evaluation form
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**Figure 1: Call for Proposals**: 14 weeks prior to NIH due date, the committee emails the department to notify them of the next internal review cycle and requests applicants to submit their intent to go through the internal review process.

**Figure 2: Presentation Agenda**: 10 weeks prior to the NIH due date, the Specific Aims Oral Presentations take place. Each applicant prepares a 10-minute presentation (6 slides max) consisting of the applicant’s brief bio (name, degree, type of grant, NIH institution, mentors), study background and research objectives, career development/training plan (K series), preliminary data, specific aims, and hypothesis.

**Figure 3: Evaluation**: Five weeks prior to NIH due date the applicant’s materials are due for internal review. The research administrator collects all documents via email and sends them to the internal reviewers anonymously*. Four weeks prior to NIH due date, the internal reviewers are given 7 days to review the documents and complete the evaluation based on the NIH scoring criteria (shown above)*.

*In August 2016, we piloted a new grant review software program called “MyPeerReview” to streamline the submission and review process. We are planning to implement this software next cycle, December 2016.

**Results**

Career Development and Research Project Success Rates by Type 2015

<table>
<thead>
<tr>
<th>Activity Code</th>
<th>NIH Success 2015</th>
<th>JHU Success 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>K01</td>
<td>34%</td>
<td>100%</td>
</tr>
<tr>
<td>K08</td>
<td>40%</td>
<td>75%</td>
</tr>
<tr>
<td>K23</td>
<td>35%</td>
<td>57%</td>
</tr>
<tr>
<td>K99</td>
<td>22%</td>
<td>100%</td>
</tr>
<tr>
<td>R01</td>
<td>16%</td>
<td>71%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>29%</strong></td>
<td><strong>81%</strong></td>
</tr>
</tbody>
</table>

**Conclusion**

Over the last five years, across 18 cycles of definitive data, 25 applications have gone through the internal review process fully (2011-2016)*, with a funding success rate average of 81%, which is well above the NIH national average of 29% for the same application categories. We believe rigorous internal review assists new and early stage investigators submit their best possible application to the NIH, resulting in significantly higher funding rates.

*All applications have been reviewed internally, 25 completed the process fully and were included in our data.

**Figure 4: Scoring Criteria**

<table>
<thead>
<tr>
<th>Impact</th>
<th>Score</th>
<th>Description</th>
<th>Additional Guidance on Strengths/Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>1</td>
<td>Exceptional</td>
<td>High impact, exceptional clarity, novelty</td>
</tr>
<tr>
<td>Very Good</td>
<td>2</td>
<td>Exceptionally strong with negligible weakness</td>
<td>High impact, clarity, novelty</td>
</tr>
<tr>
<td>Good</td>
<td>3</td>
<td>Strong but with numerous minor weaknesses</td>
<td>Moderate impact, strongest weaknesses</td>
</tr>
<tr>
<td>Acceptable</td>
<td>4</td>
<td>Some strengths but with one major weakness</td>
<td>Lower impact, weaknesses</td>
</tr>
<tr>
<td>Marginal</td>
<td>5</td>
<td>Very few strengths and numerous major weaknesses</td>
<td>Low impact, weaknesses</td>
</tr>
<tr>
<td>Low</td>
<td>6</td>
<td>Strongest weaknesses with little evidence</td>
<td>Lowest impact, weaknesses</td>
</tr>
</tbody>
</table>

**Additional Information for Scoring Guidance Table**

Non-numeric score options: N/A = Not Recommended for Further Consideration, OF = Deferred. All = Abandon, OP = Continue, HP = Has Proceed, HD = Has Discouraged

**Figure 5: Outcome**

Within the first 4 weeks a letter is sent to the internal reviewers to notify them of the next internal review cycle and requests applicants to submit their intent to go through the internal review process.