# 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 begin in 4 weeks.
- K/R Committee requests new and early stage investigators to respond with their intent to go through the internal review process.

**10 weeks prior to NIH due date**
- 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

**5 weeks prior to NIH due date**
- 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

**4 weeks prior to NIH due date**
- Internal reviewers submit the completed NIH-style evaluation form with scores and comments
- All evaluations are provided to the applicant anonymously with submission recommendations based on internal reviews

## Methods (cont'd)

Johns Hopkins University School of Medicine
Department of Neurology
K/R Internal Review Committee

JOHNS HOPKINS MEDICINE

**Specific Aims Oral Presentations**

**Oct/Nov 2016 NIH Grant Submission Cycle**

**Date: Thursday, August 4th, 9am – 12pm**
**Location: Meyer 1-191**

Faculty are encouraged to attend.
Light refreshments provided.

**Overview: The K/R Internal Review Committee assists junior faculty by providing valuable feedback on their grant applications prior to submission to the NIH.**

Please attend the session to hear the Specific Aims of those planning to submit their grants this cycle. Questions and comments are encouraged after each presentation.

**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.**

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Johns Hopkins University School of Medicine
Department of Neurology
K/R Internal Grant Review Committee
Specific Aims Presentations
Thursday, August 4th, 2016 / Meyer 1-191, 9am – 12pm

AGENDA

| | |
|---|---|
| **9:05am – 9:15am** | **Xiaobo Mao, Ph.D.**<br>Postdoctoral Fellow, Neuroscience; Nanotechnology<br>**Title: "Influence of Age on Pathogenic *a*-Synuclein Spread"**<br>Type: K01<br>Mentor: Ted Dawson |
| 9:15am – 9:25am | Questions |
| **9:30am – 9:40am** | **Tae Hwan Chung, M.D.**<br>Assistant Professor of PM&R and Neurology<br>**Title: "Age-associated Muscle Weakness and Metabolic Disturbance"**<br>Type: K08<br>Mentors: Ahmet Hoke and Jeremy Walston (Geriatric Medicine) |
| 9:40am – 9:50am | Questions |
| **9:55am – 10:05am** | **Adrian Haith, Ph.D.**<br>Assistant Professor of Neurology<br>**Title: "The Effects of Practice on the Neural Representation of Motor Skill"**<br>Type: R01 (resubmission)<br>Co-Investigators: John Krakauer, Zoltan Mari |
| 10:05am - 10:15am | Questions |

**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 (for K's), preliminary data, specific aims, and hypothesis.**

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Contact Heather Thomas for more information: hthoma21@jhmi.edu.

| Scoring Criteria | | | |
|---|---|---|---|
| **Impact** | **Score** | **Descriptor** | **Additional Guidance on Strengths/Weaknesses** |
| High | 1 | Exceptional | Exceptionally strong with essentially no weakness |
| | 2 | Outstanding | Extremely strong with negligible weakness |
| | 3 | Excellent | Very strong with only some minor weakness |
| Medium | 4 | Very Good | Strong but with numerous minor weaknesses |
| | 5 | Good | Strong but with at least one moderate weakness |
| | 6 | Satisfactory | Some strengths but also some moderate weaknesses |
| Low | 7 | Fair | Some strengths but with at least one major weakness |
| | 8 | Marginal | A few strengths and a few major weaknesses |
| | 9 | Poor | Very few strengths and numerous major weaknesses |
| **Additional Information for Scoring Guidance Table** | | | |
| **Non-numeric score options:** NR = Not Recommended for Further Consideration, DF = Deferred, AB = Abstention, CF = Conflict, NP = Not Present, ND = Not Discussed | | | |
| **Minor Weakness:** An easily addressable weakness that does not substantially lessen impact<br>**Moderate Weakness:** A weakness that lessens impact<br>**Major Weakness:** A weakness that severely limits impact | | | |

**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)*[1].**

**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**

| Activity Code | NIH Success 2015[2] |
|---|---|
| K01 | 34% |
| K08 | 40% |
| K23 | 35% |
| K99 | 22% |
| R01 | 16% |
| Average (combined) | 29% |

| Activity Code | JHU Success 2015 |
|---|---|
| K01 | 100% |
| K08 | 75% |
| K23 | 57% |
| K99 | 100% |
| R01 | 71% |
| Average (combined) | 81% |

## 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.

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

References
[1] National Institutes of Health (2009). *Interpreting New Application Scores and Critiques*. Retrieved September 22, 2016, from http://enhancing-peer-review.nih.gov/docs/scoring_and_critique_overview_June2009.pdf
[2] U.S. Department of Health and Human Services, National Institutes of Health, Office of Extramural Research (2014). Funding: Success Rates. Retrieved September 22, 2016, from https://report.nih.gov/success_rates/.