Presenter disclosure information

Name: Yibin Wang, UCLA

Title:
How to Survive in Academia: Getting Your 2\textsuperscript{nd} RO1

• Financial disclosure:
  – I have received and continue to receive rejection from the following funding agencies: National Institute of Health, American Heart of Association, UCLA, ……..
  – All my previous rejections were received without monetary compensation

• Unlabelled/unapproved use disclosure:
  My approach is unlabeled and unapproved, use at your own risk!!!
“Publications and grants are the most important thing on your CV at every stage”
NIH Research Funding Trends: FY1995-2012

Produced by
Howard H. Garrison and Kim Ngo
FASEB Office of Public Affairs

Data Sources: NIH Office of Extramural Research
NIH FY2012 Budget Summary
NIH Appropriation in Current and Constant Dollars

With Supplemental Appropriation (ARRA)
Current $ (Millions)
1995 Constant $ (Millions)
Number of Competing Awards (With Breakout of First-time R01)

- RPG plus Supplemental Appropriation (ARRA) RPG
- Research Project Grants (RPG)
- R01 Equivalent Awards
- First-time R01 Equivalent Awards
Number of Applications (With Breakout of First-time R01) Exclusive of Supplemental (ARRA) Applications

- Research Project Grants (RPG)
- R01 Equivalent Awards
- First-time R01 Equivalent Award

Number of Applications

Year: 1995 to 2011

- Number of Applications (With Breakout of First-time R01)
- Exclusive of Supplemental (ARRA) Applications

Research Project Grants (RPG)
R01 Equivalent Awards
First-time R01 Equivalent Award
Success Rates for New (Type 1) Applications, Including First-time R01 Award

Success Rate

- Research Project Grants (Type 1)
- R01 Equivalent (Type 1) Awards
- First-time R01 Equivalent Award

Getting Your 2\textsuperscript{nd} RO1?

All Investigators:
Distribution by Number of RPGs Held

Number of Awards per Principal Investigator
FY 1986 \textcolor{red}{FY 1998} \textcolor{blue}{FY 2004} \textcolor{green}{FY 2009}

Percent of All Principal Investigators

Research Project Grants include the following activity codes: R00, R01, R03, R15, R21, R22, R23, R33, R34, R35, R36, R37, R55, R56, R61, R62, R65, R69, R41, R42, R41, U1, U1, UC1, UC2, UC3, UC7, UC1, U10, U34, DP1, DP2, DP3, RC2, RC2, RC3, and UM4.

Excludes Principal Investigators that only received administrative supplements.

FY 2009 excludes applications submitted for funding consideration under the American Recovery and Reinvestment Act of 2009. The numbers include all NIH extramural grants, except for the exclusions already noted.

Update on Myth Busting: Number of Grants per Investigator
Posted on May 13, 2011 by Sally Rockey
Getting Your 2\textsuperscript{nd} RO1?

Update on Myth Busting: Number of Grants per Investigator

Posted on May 13, 2011 by Sally Rockey
Getting Your 2\textsuperscript{nd} RO1?

With this much grant money, only experiment we can do is "flip a coin"!
RO1: Investigator-initiated Research on a Discrete, Specified, Circumscribed Project

Project Overall Impact

- Significance
- Investigator
- Innovation
- Approach
- Environment

2nd RO1 = Research Longevity and Diversity
How?

Project Overall Impact

- Significance
- Investigator
- Innovation
- Approach
- Environment
Inspiration #1:  Follow a Significant Question --- All the Way!

Cloning of the gene and cDNA for mammalian β-adrenergic receptor and homology with rhodopsin

Richard A. F. Dixon*, Brian K. Kobilka†, David J. Strader‡, Jeffrey L. Benovic†, Henrik G. Dohlman†, Thomas Frielle†, Mark A. Bolanowski†, Carl D. Bennett§, Elaine Rands*, Ronald E. Diehl*, Richard A. Mumford‡, Eve E. Slater‡, Irving S. Sigal*, Marc G. Caron†, Robert J. Lefkowitz† & Catherine D. Strader‡
Inspiration #1: Follow a Significant Question --- All the Way!

- Desensitization Mechanism
- G-protein Independent Signaling
- Biased bAR Ligands

- Physiological Role of AR Subtypes
- Structural Basis of GPCR Signaling
- Rationale Design of GPCR Ligands
Inspiration #2: Follow a Significant Question --- Every Way!

- Transcriptional Mechanism in Muscle Development
- Transcriptional Pathways in Cardiac Hypertrophy
- miRNA in Muscle Development, Diseases, Cell Differentiation and Death Regulation, Metabolism, -----

Eric Olson
103 NIH Grant Year
Inspiration #3: Taking on New Emerging Issues --- Whenever and Wherever!

Cell Death Through the Mitochondria

Cardiac Hypertrophy

Cardiac Development

T-lymphocyte Development

Transcription

Mechanisms of Duchenne and Miyoshi Myopathy

Skeletal Muscle Development and Hypertrophy

Jeff Molkentin
57 NIH Grant Year
2nd RO1 = Research Longevity and Diversity

Project Overall Impact

- Significance
- Investigator
- Innovation
- Approach
- Environment

Evaluating Overall Impact

Evaluating Significance: Assuming that all the aims are successful, will the impact to the field be high (1-3), medium (4-6) or low (7-9)?

Evaluating Overall Impact: Considers the significance criterion, as well as other four criteria (weighted based on reviewer’s judgment)

Impact
- High
- Medium
- Low

Score
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

Applications must have a high level of significance. May have some or no technical weaknesses.

Applications may have a high level of significance, but weaknesses in the other criteria bring down the overall impact to medium.

Applications may have a high or medium level of significance, but weaknesses in other criteria bring down overall impact to low

Not for applications with a medium level of significance which have no technical weaknesses.

Applications may have a medium level of significance with no technical weaknesses

The entire scale (1-9) should always be considered.
To Do List – For Me

- Be Critical to Your Own Science, Remain Uncomfortable
- Be Productive
- Take on New Questions/Challenges
- Have Courage to Embrace New Approaches
- Join/Form a Research/Mentor Team
- Communicate Your Work
- Have Good Mentor(s)
Reviewer’s Interpretations to 2nd RO1 Applications

Project Overall Impact

Exciting? New? Important?

• Significance
  Importance of the questions or issues to be addressed, significantly advanced or different from 1st RO1?

• Investigator
  Publications in the past 5 yrs, major presentations in conferences

• Innovation
  Concept, method, tools, model systems and approaches, different or advanced from 1st RO1

• Approach
  Strong and supportive preliminary data

• Environment
  Team organization, Cores
Applicant’s Balance Act in 2nd RO1 Applications

Project Overall Impact
  How to highlight the impact without over-reaching

- **Significance**
  Broad vs. Specific

- **Investigator**
  Number vs. Quality

- **Innovation**
  Novelty vs. Acceptance

- **Approach**
  Preliminary Data vs. Proposed Exp
  Feasibility vs. Design

- **Environment**
  Established vs. Junior PI for Team Members
1st RO1 Success Is Just a Beginning
2nd RO1 Success is Not The End

- Stay Hungary!
- Stay Curious!
- Stay Intense!
- Keep Having Fun!
Thank You

&

Best Luck!