

New Title!

How to write an unsuccessful training grant

NRSA or K awards



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Former Director of an Institutional NRSA*



Ruth L. Kirschstein

"Ruth L. Kirschstein was an icon at the National Institutes of Health (NIH), with a scientific and administrative public service career that spanned more than half a century. After doing important laboratory work on the polio vaccine, she made history as the first woman to direct an NIH institute, the National Institute of General Medical Sciences (NIGMS). Later, she served as deputy director and acting director of NIH."

NIGMS web site.

K Award Series named for Dr. Kirschstein for her dedication to developing training programs

Primary Focus

Part 1

*NRSA Postdoctoral
Training Award*

1. The Problem of "Placement"

Question: Are you and your advisor's laboratory a "perfect match" to advance the interests of science for future generations?



The View of the NIH

The NIH wants to match the best students with the best laboratories.....doing the most exciting, innovative research.

Assumption: If a student is serious about a direction of scientific inquiry they will go to the absolute BEST LABORATORY IN THE WORLD for that direction.



Match made
in heaven

PLACEMENT "ISSUES:

1. You propose to continue doing research in your Predoc Advisor's Lab.
0% chance of successful NRSA
2. You want to stay at the same institution but with a different advisor.
% Chances cut drastically. "Life style more important than career"
Some extenuating circumstances (only partially successful).
3. Your PD advisor does not have evidence of CURRENT grant support to provide an environment necessary to do state-of-the-art research.
0% chance of a successful NRSA.
4. There is no clear connection between your predoc training, your post doc training and your future career goals. i.e. No clear career plan.
% Chances cut drastically.
5. Your PD advisor does not have a long track record of successful mentorship of previous PDs and/or grad students.
% Chances cut drastically... If none 0% chance
6. There is no evidence that you will be learning anything new in the new lab...i.e. they do the same things you did as a predoc.
% Changes cut drastically

2. Problems with "The Candidate"

a. No significant publications. (Not too important for MD candidates for Postdoc NRSA)

- 1) You should not even put the proposal in if you do not have a minimum of 2 quality publications (1st author), but 2 may be enough, especially if they are in good journals and there is promise of more on the way.
- 2) Unlike other documents, it is nice to see in an application with some description of publications that are "in the works" and an ETA for submission, etc. (e.g. "plan for submission Feb, 2012," or In review, JAP, submitted Feb, 2012). First author abstracts at national meetings are nice to see as well.
- 3) Nice to see an interest in research "early" in your training. E.g. evidence of undergraduate research, etc. Internships in research or medicine, etc.

b. Some poor pre-doctoral grades:

One or two "Ds" or "C-s" could kill the grant.

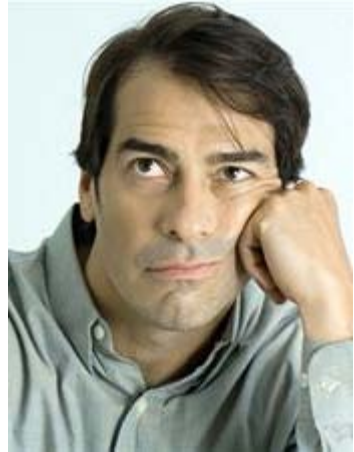
TRICK: Many students list only grades for their BEST, most "representative classes." The rules are lax on this and it is understood.

The main thing reviewers are looking for is that you have **OUTSTANDING GRADES** in Rigorous courses that will lead to a successful career.

"Postdoctoral applicants: Using the chart provided, list by institution and year all undergraduate courses and graduate scientific and/or professional courses **germane to the training sought under this award with grades.**

In the space following the chart, explain any marking system if other than 1-100, A, B, C, D, F, or 0-4.0 if applicable. Show levels required for a passing grade. "

c. Unenthusiastic Recommendation letters. Reviewers spend a great deal of time reading these (believe it or not). Choose your reviewers carefully.



1) NEVER ask a non-faculty member (e.g. employer) or a faculty member who does not know you well to write a recommendation.

2) Absence of a recommendation letter from your pre-doctoral advisor is a RED FLAG.

3) Any personal traits that come through as incompatible with success (procrastination, inability to communicate or write, etc.) will usually be enough to kill the grant.

Remember, Graduate Program directors have a vested interest in you getting a good post doc.... Often write supportive letters.

4) Some faculty have reputations for being *disproportionately tough* on recommendations. Try to find out if they have a history of this.

“no one is as good as I was at that level” syndrome.

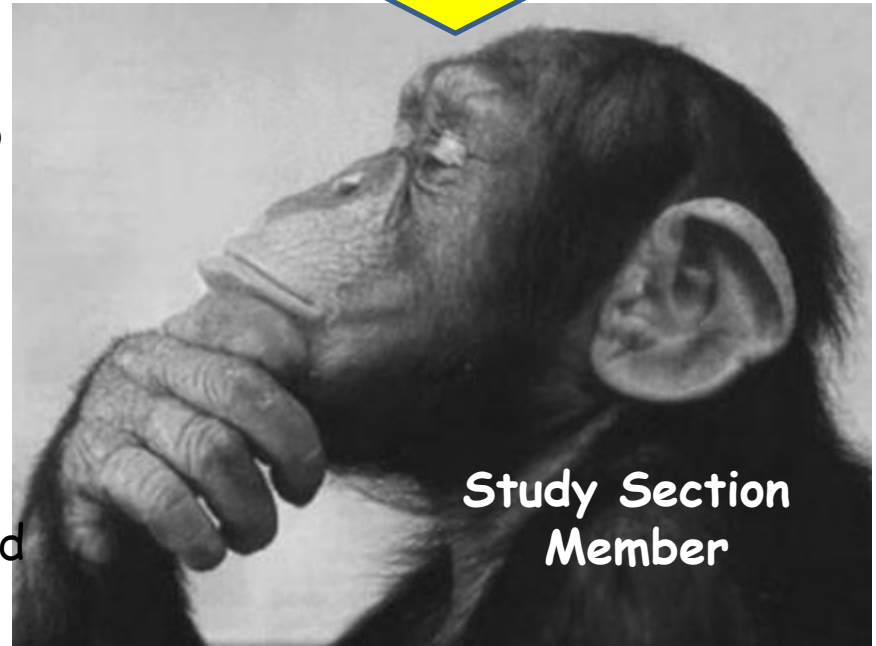
d. Disconnect between your predoc training and what you hope to get out of your postdoc training.

Example: Trained as a muscle biologist
Suddenly you want to do renal biology?
No rationale for it given.

“Is she just doing this to have a job and get to the next level, or does she really have a career plan?”

If so, you really need to justify WHY?
What do you hope to gain?

It can't be that a postdoc just happened to be available and you took it.



e. Another Death Warrant: Your Personal Statement

“Education/Training

List all degree programs beginning with baccalaureate or other initial professional education and licensure, such as nursing (RN). Include all dates (month (mm) and year (yyyy)) of degrees received or expected, in addition to other information requested.

A. Personal Statement

Briefly **describe why your experience and qualifications make you particularly well-suited for your role as a Fellowship applicant.** Within this section you may, if you choose, briefly describe **factors such as family care responsibilities, illness, disability, or active duty military service that resulted in a hiatus in training** or reduced your scientific advancement or productivity. “

Do not say, “I am still trying to figure out what I want to do. This postdoc will really help me do that.”

or

“I am hoping someday to be a really *good teacher* of physiology and this postdoc will allow me to broaden my education”

**POSTDOCTORAL NRSA_s are NOT DESIGNED TO
MAKE BETTER TEACHERS**

An example of an "Ideal Candidate" (NIH perspective)

Trained in a good lab in muscle biology.



Good-outstanding student, top 5-10%
recommendations



≥ 2 1st author publications in very good
journals.



Want to learn proteomics to develop a
muscle proteomics direction



Acquire a postdoc in a highly funded
proteomics lab specializing in muscle.
"Best in the World"



3. Problems with the "TRAINING PLAN"

There are two "Training Plan" Sections

- 1) **Research Proposal: Called "The Research Training Plan" in SR424 Instructions**
- 2) **Sponsors Statement: Includes a "Training Plan."**

- 1) Research Proposal: Called "The Research Training Plan" in SR424 Instructions (limit 6 pages)
 - a) These are scrutinized at the same level as RO1s. Is it good science or isn't it? How significant is it? Is it a logical well thought out experimental plan?
 - b) A poorly written Research Training Plan, suggests poor mentorship by the advisor.
 - c) "Briefly" include in the text how the specific research WILL TRAIN YOU. If parts will be done by others it is O.K. to say that for completion. If it is clear you could not do all of this work it will look unrealistic.
 - d) How much should reflect your advisor's grants? Highly controversial....only rarely discussed in Study Section.



NATIONAL INSTITUTES OF HEALTH

Research Portfolio Online Reporting Tools (RePORT)

REPORTS, DATA AND ANALYSES OF NIH RESEARCH ACTIVITIES

SEARCH

GO

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1R01AG041147-01

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Project Number: 1R01AG041147-01

Contact PI / Project Leader: [TIDBALL, JAMES G](#)

Title: FUNCTIONS OF MYELOMONOCYTIC LINEAGE CELLS IN AGING MUSCLE

Awardee Organization: UNIVERSITY OF CALIFORNIA LOS ANGELES

Abstract Text:

DESCRIPTION (provided by applicant): A long-term goal of our research for the past 20 years has been to understand mechanisms through which the immune system modulates function and dysfunction of skeletal muscle. In the project for which we request support, we will examine the function of a specific population of immune cells that have the potential to influence sarcopenia, the loss of muscle mass during aging. Currently, there are no treatments for sarcopenia in humans other than exercise and dietary interventions that may not be applicable for the aged. Validation of our model for immune-cell modulation of sarcopenia could provide a gateway to new therapeutic strategies for the slowing of sarcopenia. This outcome would have substantial significance for treating major health problems in the aging human population in which degradation of lifestyle, loss of independent function and development of inactivity-associated diseases can arise from the loss of muscle mass and physical activity in the elderly population. We hypothesize that aging of the immune system contributes to sarcopenia through two processes: 1) reductions in the capacity of bone marrow derived myelomonocytic cells to fuse with skeletal muscle, and 2) shifts in macrophages to a phenotype that promotes muscle wasting. Our experiments that are designed to test this hypothesis will address the following aims: Aim 1: Determine the fate of select immune cell populations in aging muscle. Aim 2: Determine whether diminishing selected immune cell populations affects sarcopenia or the regenerative capacity of muscle during aging. Aim 3: Test whether manipulation of the development of specific immune cell populations can influence sarcopenia. The findings of this investigation will provide the first information concerning the fate of cells of the myelomonocytic lineage in aging muscle and provide new insights into the mechanisms through which cells of that lineage can affect the regenerative capacity of aging muscle. That information can provide the foundation for new therapeutic strategies for addressing sarcopenia, a major health problem in the elderly. PUBLIC HEALTH RELEVANCE: Sarcopenia is the progressive loss of muscle mass that occurs in the elderly that greatly reduces their quality of life and susceptibility to injury. We propose to test whether aging of the immune system reduces the regenerative capacity of aging muscle. Validation of our model for immune-cell modulation of sarcopenia could provide a gateway to new therapeutic strategies for the slowing of sarcopenia.

Public Health Relevance Statement:

Sarcopenia is the progressive loss of muscle mass that occurs in the elderly that greatly reduces their quality of life and susceptibility to injury. We propose to test whether aging of the immune system reduces the regenerative capacity of aging muscle. Validation of our model for immune-cell modulation of sarcopenia could provide a gateway to new therapeutic strategies for the slowing of sarcopenia.

NIH Spending Category:

Aging; Prevention; Stem Cell Research; Stem Cell Research - Nonembryonic - Non-Human

Project Terms:

Ablation; Address; Affect; age related; aged; Aging; Biological Assay; Bone Marrow; Bone Marrow Cells; Bone Marrow Transplantation; Cell Lineage; Cell Size; Cells; cytokine; design; Development; Dietary Intervention; Disease; Elderly; Event; Exercise; Foundations; Frequencies (time pattern); Functional disorder; Goals; Health; Hematopoietic; Human; Immune; Immune system; Injury; insight; Investigation; Knockout Mice; Life Style; macrophage; Mediating; Modeling; Muscle; muscle aging; Muscle Cells; Muscle Fibers; muscle form; Muscle satellite cell; Myelogenous; Myeloid Cells; novel therapeutics; Outcome; Pathway interactions; Phenotype; Physical activity; Population; Predisposition; Process; Quality of life; regenerative; Research; research study; sarcopenia; Skeletal muscle structure; Testing; TNF gene; Transplantation; Validation; wasting

3. Problems with the "TRAINING PLAN"

There are two "Training Plan" Sections

1) Research Proposal: Called "The Training Plan" in SR424 Instructions

2) Sponsors Statement: Includes a "Training Plan."

2. Sponsor and any Co-Sponsor(s) (if any) Information (Limit to 6 pages) SF424 (R & R)

a. Research Support Available

In a table, list all current and pending research and research training support specifically available to the applicant for this particular training experience.

b. Sponsor's/Co-Sponsor's Previous Fellows/Trainees*PHS SF424 (R&R) Individual Fellowship Application Guide Part I: Instructions for Preparing and Submitting an Application I-65*

Give the total number of predoctoral and postdoctoral individuals previously sponsored. Select five that are representative.....

c. Training Plan, Environment, Research Facilities

Describe the research training plan that you have developed **specifically for the Fellowship applicant**. Include items such as classes, seminars, and opportunities for interaction with other groups and scientists. Describe the research environment and available research facilities and equipment. Indicate the relationship of the proposed research training to the applicant's career goals. Describe the skills and techniques that the applicant will learn. Relate these to the applicant's career goals.

d. Number of Fellows/Trainees to be Supervised During the Fellowship

Indicate whether pre- or postdoctoral. Include this information for any co-sponsor as well.

e. Applicant's Qualifications and Potential for a Research Career : Describe how the Fellowship applicant is suited for this research training opportunity based on his/her academic record and research experience level, including how the research training plan, and your own expertise as the sponsor will assist in producing an independent researcher.

Common "Issues" with the Sponsor's Statement Training Plan

- 1. "Cookie cutter" Training Plan. One size fits all... It needs to be UNIQUELY suited to the Trainee and the advisor and thought about carefully.**
 - a) What academic holes from predoc training does that applicant need to fill, modeling, statistics, biochem, molecular biology, etc.?
 - b) Does the applicant need to develop additional writing skills? Grant writing skills? Speaking skills?

- 2. No consideration given to how the sponsor will provide an environment of camaraderie with other trainees and faculty.**
 - a) Journal clubs? Social outings? Travel?
 - b) Are there other trainees at various levels in the lab? Too many? Not enough?

More ISSUES

3. No formal training in Bioethics and Misconduct

1.16 Policy on Instruction in the Responsible Conduct of Research SF424_RR

“NIH requires that all trainees, fellows, participants, and scholars receiving support through any NIH training, career development award (individual or institutional), research education grant, and dissertation research grant **must receive instruction in responsible conduct of research.**”

It is not enough that you have “heard it all and taken it all as a grad student” You need to formally take it again, or propose to take it. It is very explicit about this...and checked off at the time of review.

4. No discussion of how the Sponsor will work “individually” with the trainee to make the transition to a future faculty/investigator.

How to run a lab?

How to balance family, career and self (mentorship)

Needs of women trainees in gender issues.

Needs of minority trainees.

Writing skills.

Opportunities to give seminars, jam sessions, working with other faculty

Have additional mentors been identified?

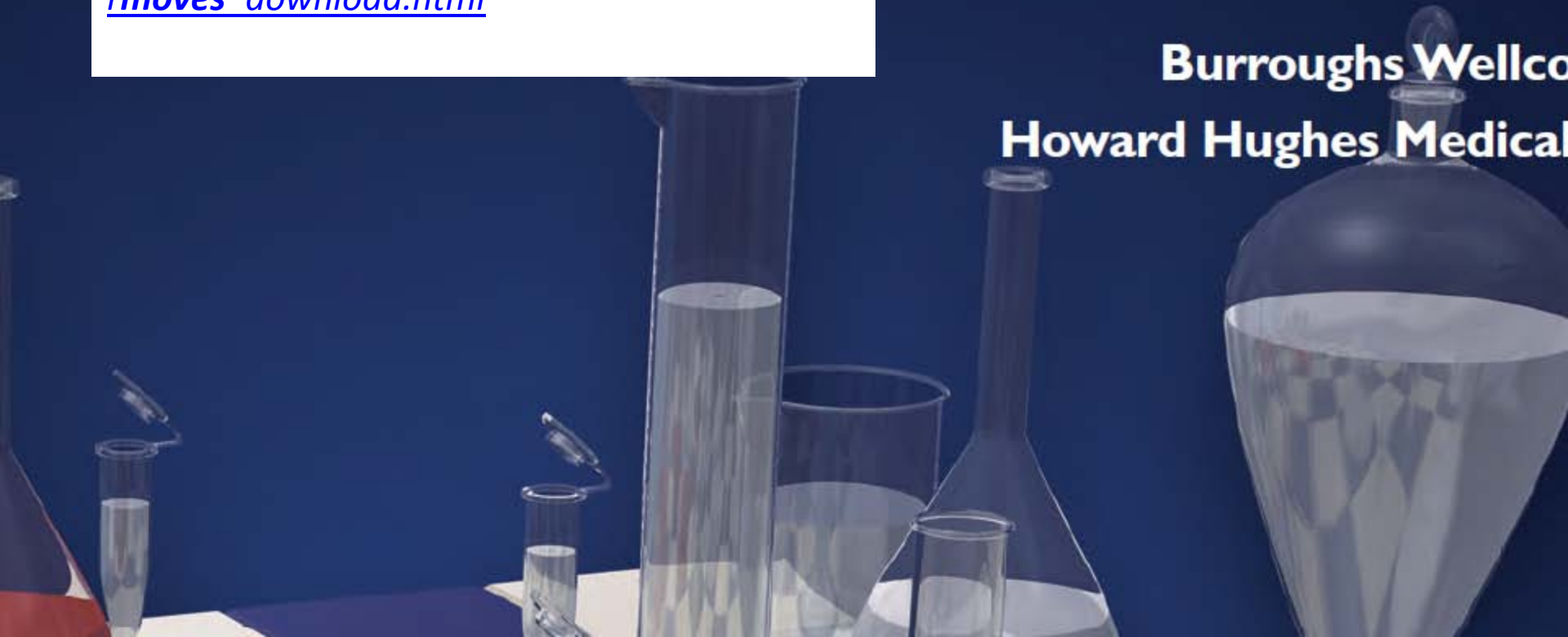
Making the Right Move

A Practical Guide to Scientific Management for Postdocs and New Faculty

www.hhmi.org/resources/labmanagement/moves_download.html

Burroughs Wellcome

Howard Hughes Medical Institute





Has the Sponsor thought about what happens
"After the postdoc?"

K Award?

Junior Faculty Positions available?

Part II

Small Recommendations Regarding K awards

- Funding Opportunities**
- Funding Opportunities (RFAs, PAs) & Notices
- Unsolicited Applications (Parent Announcements)
- Research Training & Career Development**
- Extramural Training Mechanisms
- Intramural
- News
- Career Resources
- Q&A and FAQs
- Small Business (SBIR/STTR)
- Contract Opportunities
- NIH-Wide Initiatives**
- New and Early Stage Investigators
- Stem Cell Information
- NIH Common Fund
- OppNet (Behavioral & Social Sciences)

K Kiosk - Information about NIH Career Development Awards

- [K-Awards Across Institutes and Centers](#) (June 1, 2010) - (Excel - 813 KB) - Institute and Center specific information with links to appropriate websites
- [Career Award Wizard](#) - Helps you select the right career award
- **Visual Guide to NIH Career Development Awards**
 - [For individuals with a research doctorate](#)
 - [For individuals with a health-professional doctorate](#)
- **Career Award Data and Administrative Information**
 - [Funded Career Development Awards](#)
 - [Career Award Application Success Rates](#)
- **Career Development Podcasts** 
 - Enhance Your Research Capabilities through an Independent Career Award (July 29, 2010) - [MP3](#) (15 min) | [Transcript](#)
 - Using Career Development Awards to Achieve Independence (June 21, 2010) - [MP3](#) (12 min) | [Transcript](#)



Program	Description
Policies and	Career Award Policy Issues

There are currently 13 different K awards :
Each is Institute Specific and it always changes

Program	Description
Policies and Notices	Career Award Policy Issues
K01	NIH: Mentored Research Scientist Development Award (Parent K01) (PA-11-190) (See NOT-OD-11-063) NCI: NCI Mentored Research Scientist Development Award to Promote Diversity (K01) (PAR-12-050) NIDDK: NIDDK Mentored Research Scientist Development Award (K01) (PAR-12-020) NINDS: NINDS Career Development Award to Promote Diversity in Neuroscience Research (K01) (PAR-09-065) NIA: Promoting Careers in Aging and Health Disparities Research (K01) (PAR-09-136) FIC: International Research Scientist Development Award (IRSDA) (K01) (PAR-10-066)
K02	NIH: Independent Scientist Award (Parent K02) (PA-11-191) (See NOT-OD-11-063) FIC: Independent Scientist in Global Health Award (ISGHA) (K02) (PAR-10-065)
K05	NCI: Established Investigator Award in Cancer Prevention & Control (PAR-12-065)
K07	NIH: Academic Career Award (Parent K07) (PA-11-192) (See NOT-OD-11-063) NCI: Cancer Prevention, Control, Behavioral, and Population Sciences Career Development Award (K07) (PAR-12-067)
K08	NIH: Mentored Clinical Scientist Research Career Development Award (Parent K08) (PA-11-193) (See NOT-OD-11-063) NCI: NCI Mentored Clinical Scientist Research Career Development Award to Promote Diversity (K08) (PAR-12-051) NIAMS: Mentored Clinical Scientist Research Career Development Award in Muscular Dystrophy Research (K08) (PA-11-077)
K12	The following Mentored Clinical Scientist Development Program Awards (K12) provide support to an institution for the develop

Some Last Observations about K Award Applications

K awards are NOT designed as "MINI-RO1s FOR YOUNG PEOPLE"

They are designed to provide an opportunity to further develop your career and prepare to be a future P.I. and academic.

Don't hesitate to build a "MENTORING TEAM" to get you to the next level.

There has to be a STRONG TRAINING ASPECT to the Research Plan. Much more so than in an NRSA. You have to be involved in new research methods that you are being trained in to develop your career.

Make sure the K is lined up with the Institute you are requesting support from.

Make sure your institution has provided sufficient assurances that there is a job and a lab for you to work in and develop.

A rhinoceros is shown in profile, facing right, standing on a green lawn. The rhino's skin is thick and grey, with prominent folds and a bumpy texture. It has a small, pointed horn on its snout. In the background, there is a metal fence and dense green foliage. The text "Stay Thick Skinned" is overlaid in white on the rhino's side.

Stay Thick Skinned

IN THE NEWS

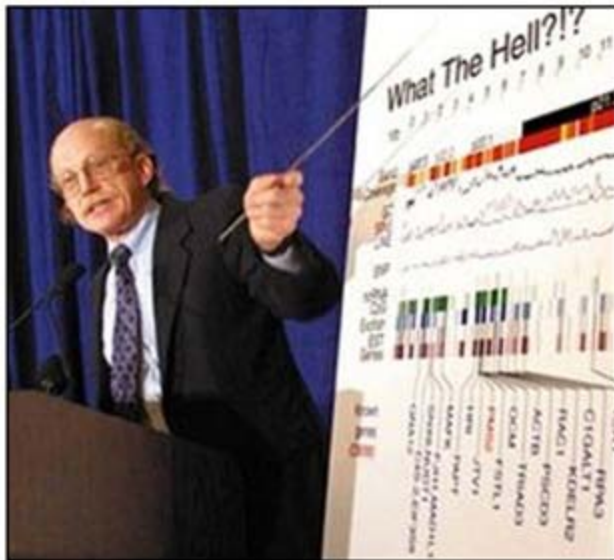
NEWS

National Science Foundation: Science Hard

JUNE 5, 2002 | ISSUE 45-01 ISSUE 38-21

INDIANAPOLIS—The National Science Foundation's annual symposium concluded Monday, with the 1,500 scientists in attendance reaching the consensus that science is hard.

[Enlarge Image](#)



Farian explains the NSF findings.

newly discovered 'Law of Difficulty' holds true for all branches of science, from astronomy to molecular biology and everything in between."

"For centuries, we have embraced the pursuit of scientific knowledge as one of the noblest and worthiest of human endeavors, one leading to the enrichment of mankind both today and for future generations," said keynote speaker and NSF chairman Louis

Farian. "However, a breakthrough discovery is challenging our long-held perceptions about our discipline—the discovery that science is really, really hard."

"My area of expertise is the totally impossible science of particle physics," Farian continued, "but, indeed, this

Please email me if you want a copy of this
presentation:

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