Research Specialist Award: Establishing a New Career Path

Dinah S. Singer, Ph.D.
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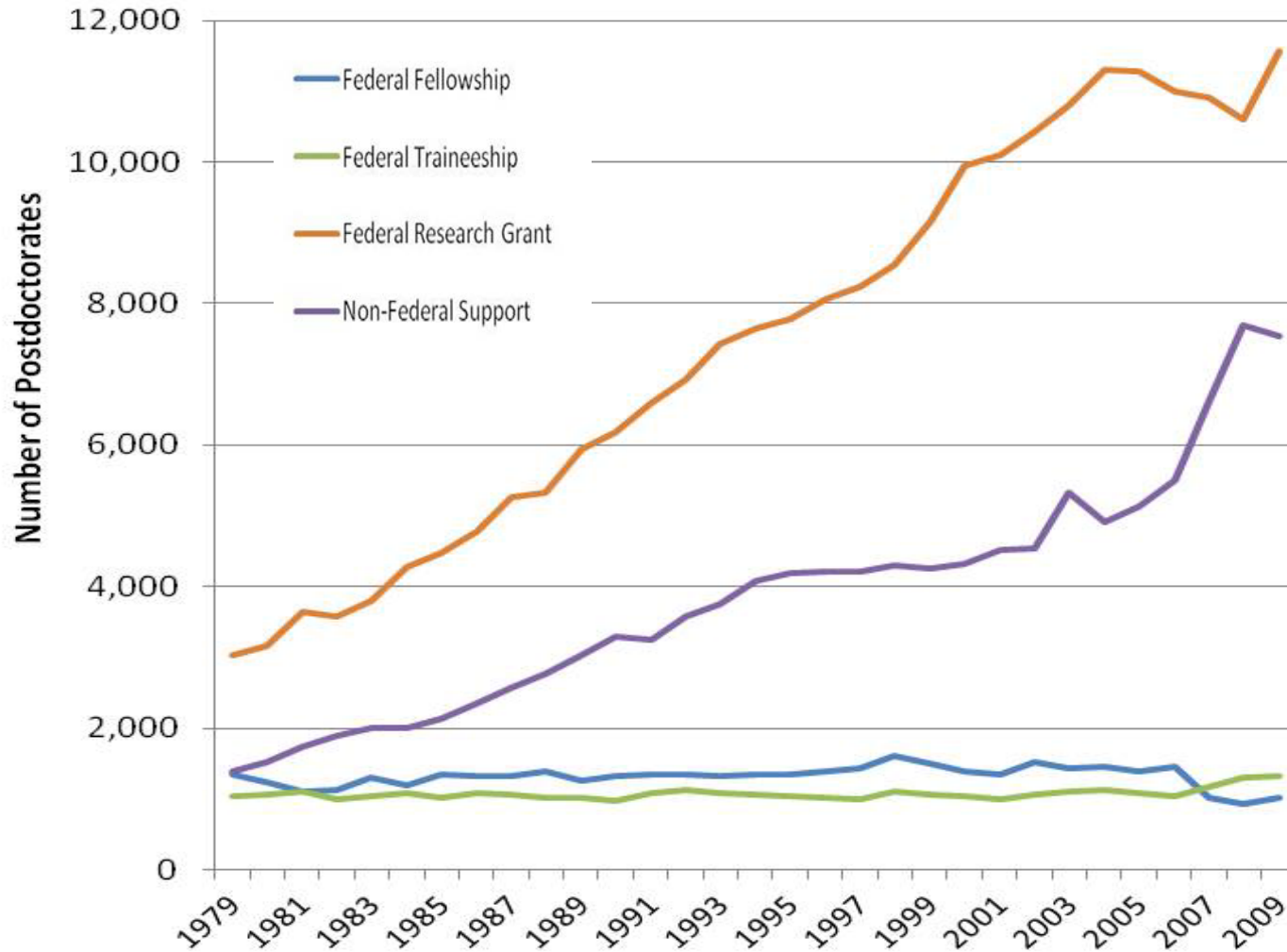
Towards Change in the Scientific Community:

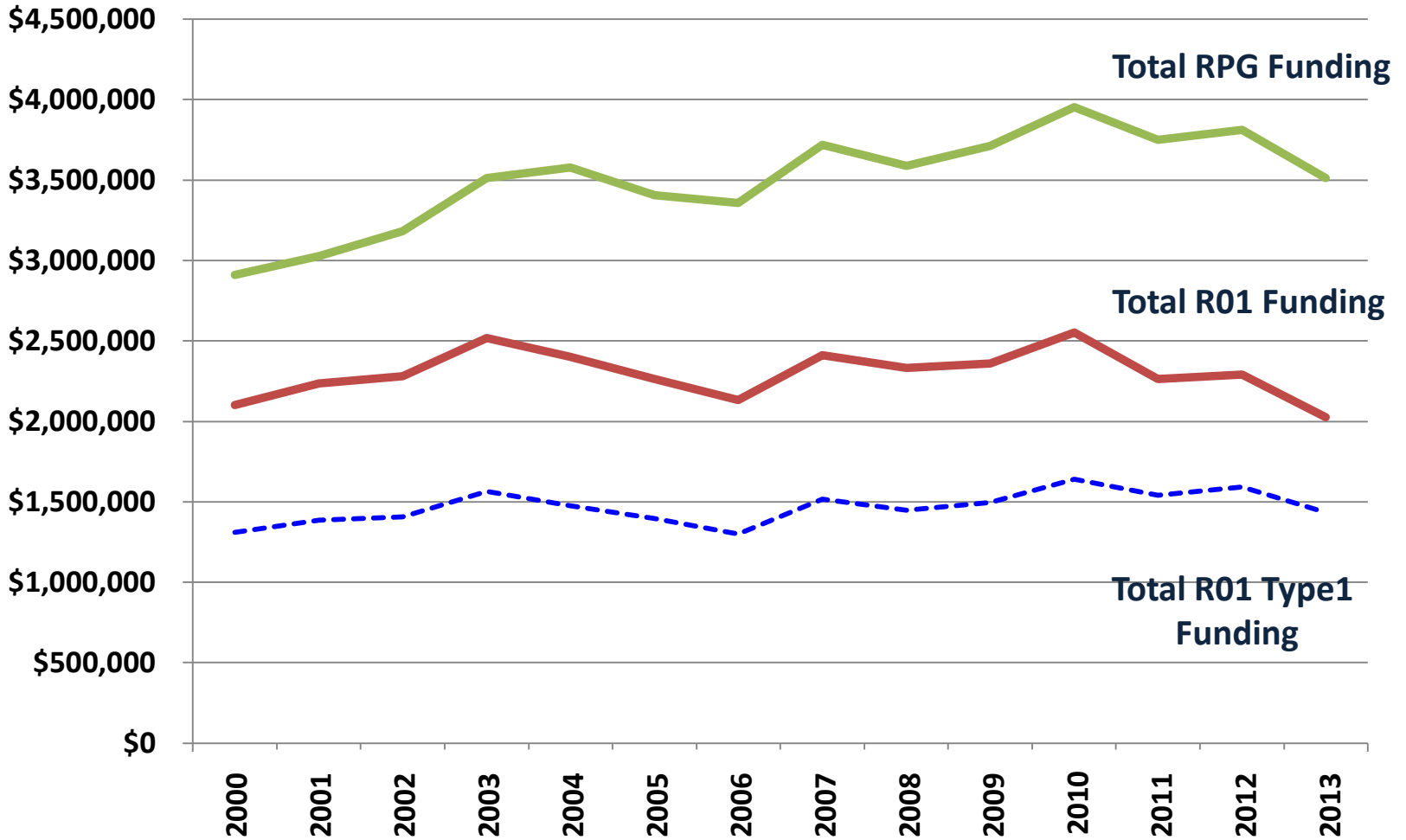## The composition and renewal of the biomedical workforce

The Problem:

The existing "life cycle" of biomedical research – supporting and training multiple post-docs and graduate students who go on to establish their own labs in which they train multiple post-docs and graduate students – has fueled a growth rate that is not sustainable.

The Number of Post-doctoral Trainees Has Nearly Doubled Every Decade

Source: Graduate Students and Postdoctorates Survey

NCI Funding Has Remained Essentially Flat Since 2000

Towards Change in the Scientific Community:

The composition and renewal of the biomedical workforce

The Problem:

The existing "life cycle" of biomedical research – supporting and training multiple post-docs and graduate students who go on to establish their own labs in which they train multiple post-docs and graduate students – has fueled a growth rate that is not sustainable.

The Consequence:

A career in biomedical research has become much more competitive and stressful and much less attractive.

Towards Change in the Scientific Community:
The composition and renewal of the biomedical workforce

The Goal:

Implement changes that will make careers in biomedical research once again attractive

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To re-establish a thriving, attractive research environment, we need to consider changes at each point of the "life cycle":

- **Early stage - Training (P2P)**
- **Mid-career – Stability**
- **Late-career - Transitioning**

Mid-Career: Supporting Stable Research Teams

1. **Stable funding mechanisms for PIs**

   • **Outstanding Investigator Award**

➡️ 2. **Research Specialist career track**

Mid-Career: Supporting Stable Research Teams

I. Research labs are increasingly dependent on groups with a broad spectrum of expertise (molecular biologists, biochemists, data scientists, etc).
To be effective, such groups need to be relatively stable.

- But labs currently depend primarily on students and post-docs who <u>should</u> be in short-term training positions.

II. There is no career path for accomplished scientists who do not want to be PIs but who could provide expertise and continuity to research efforts.

Research Specialist Award
(KO5)

Intended to encourage the development of stable career opportunities for exceptional researchers who want to pursue research but not be independent investigators.

The award is intended to provide competitive salaries and sufficient independence to make this an attractive and sustainable career path.

Research Specialist Award
(KO5)

Award would support individuals in various types of positions, including but not limited to:

- **lab research scientists**
- **core facility managers**
- **data scientists**

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Eligibility

- Masters, PhD, DVM, MD, DDS
- Applicants must be sponsored by their PI and Institution.
- It is anticipated that only individuals who have already made significant contributions to the cancer research program of a lab or to a core would be sponsored

Research Specialist Award
(KO5)

Terms of Award

- Grant would support that portion of the salary dedicated to cancer research.
    - Grantees would be expected to spend the majority (>50%) of their effort on NCI-funded research
    - Could receive up to 100% salary support
- Salaries would follow host institution policies, but be capped at the NIH PI level
- Grant would not cover research expenses, but could include travel funds
- Grantees would have independence to move to other labs or institutions
- Awards would be for 5 years and renewable

Research Specialist Award
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Applications

The application would include:

- **NIH biosketch**
- **A research proposal written jointly by the PI and applicant including:**
  - **A description of the cancer research program or core**
  - **The role and importance of the applicant to the research program/core**
  - **Accomplishments of the applicant individually and within the nominating lab/core**
  - **A description of the research area that the applicant proposes to pursue (lab or data) or the responsibilities of the core.**
- **Letters of recommendation from the PI and at least 3 from PIs of other labs**

Research Specialist Award
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- **Initial applications could be made while the applicant is supported on a research grant.**
    - **During the transition from an existing grant to the Research Specialist Award, salary support would be shared with the existing grant providing up to 50% (but not more than current salary) and the Research Specialist award providing the rest.**
    - **Any residual 50% salary support freed up on the PI's grant could be redirected within the scope of the PI's grant until the end of the current funding period.**
    - **After the end of the grant, the salary would be covered by the Research Specialist Award.**

Research Specialist Award
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- **Renewal applications would include:**
  - **Documentation of contributions to the research program or core**
  - **Reference letters from senior authors on papers on which applicant was a co-author**
  - **Any other significant activities (e.g. mentoring of trainees) that contributed to the overall research effort**

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Review Criteria

- Review would be based on:
  - Accomplishments of the applicant, both individually and within the context of the nominating lab/core.
  - The level of accomplishment and commitment of the sponsoring Principal Investigator and Institution.
  - The scope of the proposed research area and the suitability of the applicant
  - The importance of the applicant to the research program of the PI or to the functioning of the core
- The contributions of the applicant to the nominating lab/core to date.

Justification for RFA

Currently no mechanism exists at NIH to support Research Specialists.

An RFA is proposed for this concept:
- To demonstrate NCI's commitment to the development of this new career path
- To notify the extramural research community of the intended size and scope of the program

Proposed Set-Aside Budget

- **The Research Specialist Award initially would be a pilot program**

- **For this pilot, we anticipate funding 50-60 awards over an 18 month period**

- **A set-aside of $5M is requested**
  - **Based on the salary ranges for NIH Staff Scientists, academic Instructors, Research Scientists and Core Directors of $75-100K**

Research Specialist Award
(K05)

Considerations and Unintended Consequences

The award will be portable to another lab or Institution, <u>contingent on the approval of a revised proposal by NCI</u>, if:

- **the PI moves to another Institution and the Research Specialist moves with the PI.**
- **the PI leaves or the lab is closed, the Research Specialist moves to another sponsoring lab.**
- **a core is closed, the Research Specialist moves to another core.**

Research Specialist Award
(K05)

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The award will be portable to another lab or Institution, <u>contingent on the approval of a revised proposal by NCI</u>, if:

- the Research Specialist <u>chooses</u> to leave the sponsoring lab for another lab
  - A revised proposal providing an explanation of the scientific reasons for the separation and the proposed new area of research, jointly written by the Research Specialist and new PI
  - The original PI would be eligible for an administrative supplement of up to two years to the grant(s) that the Research Specialist worked on.

Evaluation of the Pilot

A number of issues will be monitored to assess the success or failure of this pilot:

- The research productivity of awardee. Examples:
  - For lab-based awardees, contributions to scientific advances (e.g. publications, invited talks)
  - For core directors, quantity of services, innovations in technology
- Overall productivity of lab or core
  - Were the accomplishments of the unit supported by the awardee improved?
  - Was the awardee able to devote more time to the unit?

Evaluation of the Pilot

Issues to be monitored (Continued):

- **Did the pilot achieve the goal of maintaining stability within the lab**
  - **How many requests were made by awardees for transfers to new units?**
  - **Were those requests justified (e.g.. moving with PI, lab closure)**
- **PI or Institutional assessment of the value of the RSA**
- **Awardee assessment of RSA**

Questions?

Research Specialist Award
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NCI management of the Research Specialist Awards

- The Research Specialist Award will be a pilot program for the first few years.
- Individual awards would be managed by the Program Director managing the parent grants of the sponsoring PI. If there are multiple grants to that PI or Institution, Research Specialist Award referral should be based on major time commitment of the Research Specialist.
- The locus within NCI where the overall program would be managed needs to be decided.
- The program would be evaluated after 5-10 years, to determine whether it has succeeded in retaining a cadre of accomplished scientists who support successful research programs.