The NHFP: A Review of 30 Years of Excellence in Astrophysics

Presentation to the NAS Astronomy & Astrophysics Committee

Rita Sambruna and Nicolle Zellner
Co-Chairs, on behalf of the NHFP Review Panel
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Full report at
https://science.nasa.gov/astrophysics/documents

The Charter

1. Success of the NHFP under its current structure
2. Diversity, equity, and inclusion of the program

…. several specific questions for each area, and additional ones for selected issues

The Team

- Rita Sambruna, NASA's GSFC, co-Chair
- Nicolle Zellner, NASA HQ and Albion College, co-Chair

- Marcel Agueros, Columbia University
- Kate Follette, Amherst College
- Stefanie Johnson, University of Colorado
- N. Jeremy Kasdin, Princeton University
- Xin Liu, University of Illinois
- Sherard Robbins, Visceral Change
- Keivan Stassun, Vanderbilt University

- Bianca Chavez and Hannah Woods, Executive Secretaries (Albion College -> UT-Arlington, Purdue)

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Fact Gathering Phase

- **Program Implementation**
  - Structure of the Program
  - Administration of the grants
- **Application and Selection Processes**
  - Criteria for evaluation
  - Peer review
  - Selection of the Fellows
- **Health and Well Being of the Fellows**
  - Tenure issues
  - Benefits , salary, etc.
- **Equity, Diversity, and Inclusion Topics**
  - Applicant pool
  - Selected Fellows
  - Host institutions

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Contributors

- The Hubble Project, the NHFP Leads, the Grant Administration office, the Fellows' Equity, Diversity, and Inclusion Working Group
- Q&A session with former and current Fellows
- Survey of Administrators and Chairs of host institutions that have not been frequently selected
- Survey of previous and current Fellows (30 yrs of the Program) - Dr. S. Johnson

27 Findings in 5 Broad Topics

- Mission of the NHFP
- Management of the Program
- Application and Review Processes
- Diversity and Accessibility of the Program
- Support of the Fellows

…. Generated 32 recommendations from the Chairs

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Findings: High-level View

- The dedication of the NHFP Leads, supporting personnel, who strive to maintain the prestige of the Fellowship, integrity of the review process;
- The importance of the NHFP Fellowship in shaping careers and defining the field and the culture of Astrophysics;
- The need for the NHFP to formulate a shared mission statement, in alignment with NASA and SMD core values;
- The value of a holistic evaluation of applicants, including assessment of inclusive leadership, which will require a restructuring of the application and review processes;
- The need to provide additional information and discussion sessions for applicants, reviewers, and other stakeholders;
- The necessity of data collection about applicants, and also about Fellows' experiences, so that the Program can be effectively evaluated over time; and

- **The crucial need for institutional, community, & individual behavior changes to promote and sustain DEIA in the field of Astrophysics**

Findings: Overarching Themes

- Alignment of NHFP mission with the core values of NASA and SMD:

Leadership
Excellence
Integrity
Teamwork
Safety
Inclusion

- Holistic Review of applicants for both excellence in science and **collaborative, inclusive leadership**

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An Opportunity for a Culture Change

Finding 1: *NHFP is a singularly important vehicle by which NASA SMD can continue to influence the future of the field, through the identification, support, and development of the field's future leaders.*

Finding 19: *There is a missed opportunity for NASA to use the Fellowship as a vehicle to improve equity of our field, and to set the standards for the inclusive leadership attributes that will define the Astrophysicists of tomorrow.*

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"The NHFP is without a doubt one of our most prestigious fellowships in Astronomy. As such, it really is well-suited to help change the culture ..., and to help open up opportunities in Astronomy (and other sciences) to a broader and more diverse pool of participants."

K. Bjorkman, University of Toledo

Provost and Executive Vice President for Academic Affairs

Distinguished University Professor

Helen Luedtke Brooks Endowed Professor of Astronomy

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The Report in a Nutshell (1/2)

- The NHFP aims at excellence, and the 21st-century Astrophysics landscape calls for more than just scientific excellence (…) if the great challenges of the future are to be met. **Teamwork, mentoring, and community building** skills should be paramount for the leaders of tomorrow.

- A **new definition of excellence** is crucial for the NHFP and it must embrace the NASA/SMD core values. It must place a focus on inclusive, collaborative leadership as one of the defining criteria for the selection of Fellows.

The Report in a Nutshell (2/2)

- **Changing the demographics of the Fellows is imperative** for the field, as the NHFP embodies the aspirations, values, and standards of the Astrophysics community.

- While “first order” changes have been presented and suggested in the review report as the first essential step, a much more challenging endeavor is **to change the *culture* of the community** - a “second order” change - to fully reflect the values of diversity and inclusion, without which significant innovation is not possible.

- Full report at https://science.nasa.gov/astrophysics/documents

Message to Astronomy Community

"The argument for DEIA is that equity is not, by itself, quantifiable, but largely measured by institutional and cultural impact."

Dr. S. Robbins,

Chapter 6, p. 37

The 3 Pillars for Change:

1. Institutions

   never engage recruitment (diversity) without retention (inclusion)

2. Community

   commit to upsetting the established order

3. Individual Behavior

   attitudes and actions of an organization's people

Sustainable Change

Table 2. Organizational Alignment Card (*Visceral Change*, 2021).

Organizational Design		**Organizational Behavior**		**Sustainable Outcomes**
Same Design	+	Same Behavior	=	Same Outcome
Same Design	+	Changed Behavior	=	Same Outcome
Changed Design	+	Same Behavior	=	Same Outcome
Changed Design	**+**	**Changed Behavior**	**=**	**Changed Outcome**

Alignment with the 2020 Decadal

- **Multiple overlapping ideas (examples):**
  - Invest in the scientific community
    - Support early-career researchers, with a strong emphasis on broadening access and removing barriers to participation, and on supporting holistic career development
  - Improve efforts to recruit & retain a more diverse workforce
    - Early career -> senior leadership
    - Diversity is a driver of innovation, and the field can be at its most innovative only when it fully utilizes the broadest range of human talent

From:https://www.nap.edu/resource/26141/interactive/

Current Actions

NASA has been developing an implementation plan

- APAC
- Community input

Full report at
https://science.nasa.gov/astrophysics/documents