

A person wearing blue jeans and brown shoes stands on a white line on a paved surface. A large white arrow points downwards from the line they are standing on. The background is a textured, light-colored pavement.

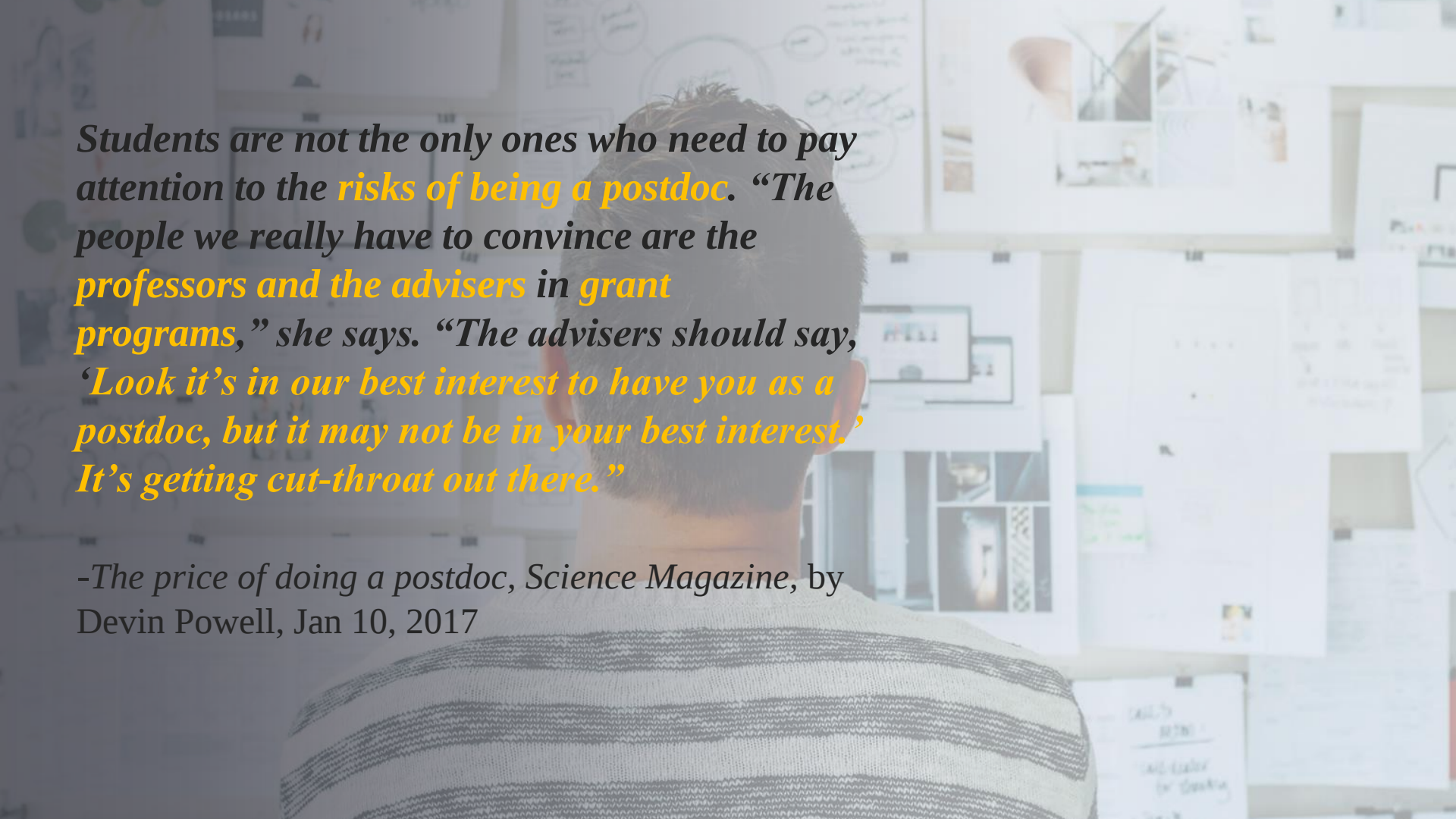
Moving Beyond the Ivory Tower: Understanding non-academic career support among postdocs

by

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*Students are not the only ones who need to pay attention to the **risks of being a postdoc**. “The people we really have to convince are the **professors and the advisers in grant programs**,” she says. “The advisers should say, ‘**Look it’s in our best interest to have you as a postdoc, but it may not be in your best interest.**’ **It’s getting cut-throat out there.**”*

-The price of doing a postdoc, Science Magazine, by Devin Powell, Jan 10, 2017

Primary Research Question

Given that postdocs are likely not to find academic employment because of educational mismatch, what does literature say about how individual, faculty and organizational factors mitigate non-academic career attainment?

Overview

- 1. Using educational mismatch to understand overall postdoc employment misalignment.**
- 2. Review of literature: factors impacting postdoc transition to non-academic careers**
 - Individual**
 - Faculty**
 - Organizational and policy**
- 3. Supplemental research findings: employer, PI, & organizational perspectives**
- 4. Policy recommendations**

1. Educational Mismatch and Non-Academic Career Attainment by Postdocs

DEFINITION OF EDUCATIONAL MISMATCH

- The overeducation of an individual for the responsibilities of his or her job.
- When an individual does not possess the requisite skills required to succeed in their position.

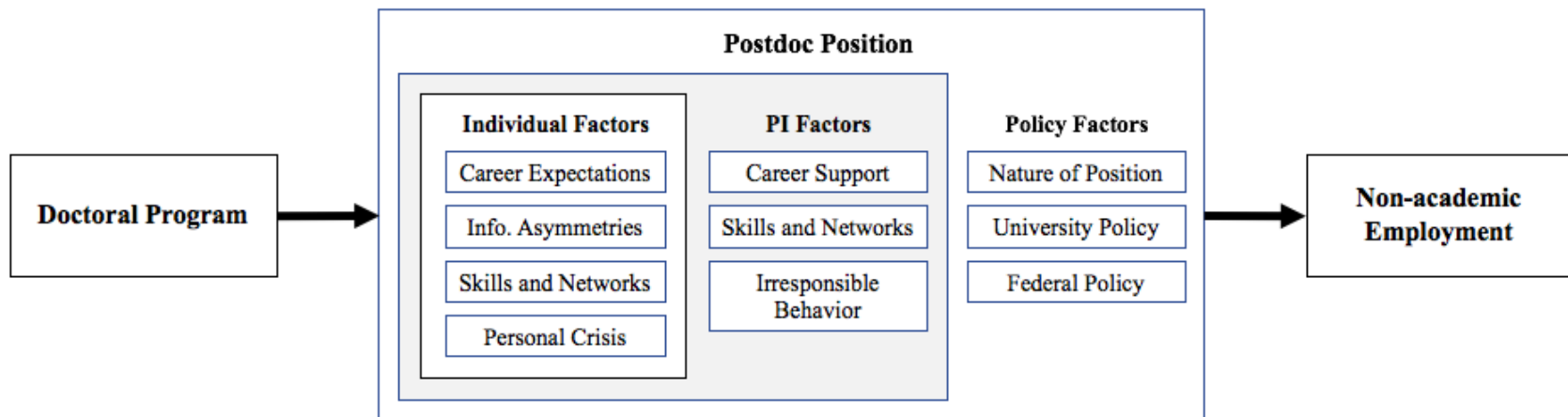
(Stenard and Sauermann, 2016; Hartog, 2000; Hartog and Oosterbeek, 1988; Allen and Van der Velden, 2001)

Educational mismatch among postdocs means that...

- Although postdocs do not occupy tenure-track faculty positions, they can become too qualified for other post-graduate jobs.
- Emphasis on academic training does not adequately prepare postdocs for non-academic careers.

2. Review of Literature

The role of individual postdocs, PI behaviors and organizational and policy factors in mediating career outcomes.



Individual Factors

Heightened Taste for Science

(Barnacle and Mewburn, 2010; Roach and Sauermann, 2010)

Poor Job Market Data

(Akerlind, 2009; Felisberti and Sear, 2014; Scaffidi and Berman, 2011)

Non-Academic Motivations

(Mangematin, 2000)

Poor Skills and Networks

(Mangematin, 2000; Hancock and Walsh, 2014)

Stress

(Puljak and Sharik, 2009)

PI Factors

Socialization

(Gardiner et al., 2014; Stephan, 2012)

Networks and Information

(Golde, 2005; Akerlind, 2005)

Perspectives on Postdoc

(Singer, 2004; Cantwell and Taylor, 2013)

Organizational and Policy Factors

Mitigating Job Information Assymetry

(Sauermann and Roach, 2012; Fitzenberger and Schultze, 2014)

Structured Support

(National Research Council 2000;, 2014; Scaffidi and Berman, 2011; Davis, 2009)

3. Supplemental Research Findings

- Postdocs will generally not find academic employment and are thus in need of PI support, knowledge and skills that will allow them to pursue and obtain non-academic employment.
- Employers and startups value postdoc skills, knowledge and connections, but highlight challenges with them.
- Postdocs will generally not find academic employment.
- Postdocs are thus in need of knowledge and skills that will allow them to pursue and obtain non-academic employment, but may not be fully supported by PIs.

SUMMARY OF FINDINGS (cont'd)

- Universities increasingly recognize the importance of providing career services, including those that target non-academic careers.
- These career services are relatively modest, with some programs focusing on providing experiential learning experiences for postdocs.
- However, these services may not be offered for all postdocs beyond a specific discipline or lab.
- Even when universities offer relevant services, broader barriers may exist, including the refusal of PIs to let postdocs take advantage of these services or lacking organizational resources (e.g. limited personnel or temporary funding).

4. Recommendations

- Broaden the scope of Individual Development Plans.
- Investigate ways to align university, state, and federal efforts to accelerate technology transfer and commercialization efforts with postdoc career services.
- Explore the alignment of state and federal-level university-industry partnership grants.
- Augment current survey instruments to include information that can highlight the difficulty or ease by which postdocs obtain non-academic employment.
- Establish a congressionally-mandated blue ribbon commission on postdoc experiences and career attainment.