A newcomer's view of research administration in uncertain times

Sarah Nusser, Vice President for Research, Iowa State University

For many years, faculty have faced considerable uncertainty in their research funding environments as well as increased requirements in managing research. In response, researchers have evolved their programs to take advantage of changing research priorities and funding availability, and have learned how to couple fundamental research with a good management plan, compliance and outreach activities, and an explicit focus on broader impacts.

In many ways, the public university experience is not so different from that faced by researchers. State investment and federal funding are at best volatile and more likely to be shrinking; we are experiencing increased scrutiny of our administrative, educational and research practices; and the role of research is also being reframed as part of the broader creative and translational process of innovation.

Like our faculty, we must evolve to meet this challenge. When I joined the Office for the Vice President for Research, we began evaluating the research environment at Iowa State University from the perspective that being responsive to change offers an opportunity to improve how we operate. For example, the focus on accountability sets the stage for developing a research culture that actively commits to ethical behavior. The push for embracing the full innovation chain enables us to more fully express our applied research and consider a much broader set of research sponsors.

At this point in our thinking, we are working with a few basic tenets to help us move forward. First and foremost is the importance of a diversified portfolio in managing volatility in funding opportunities. The second focus area is preparing our faculty to respond to opportunity as it arises. A third and trickier consideration is managing risk in the research and development process as funding sources, regulatory guidelines, and commercial opportunities expand. Finally, serious strategic planning and effective resource management are required to meet our goals.

This paper briefly reviews four examples that illustrate how these themes are shaping our thinking.

Range of focus in research development (increasing diversity and engaging opportunity)

We tend to invest heavily in the star researchers and research-intensive colleges, departments, and programs where the return on investment is most significant. However, there are pockets throughout the rest of the university that have the capacity to engage in higher levels of sponsored funding. For example, some faculty and research groups are active in niche disciplines that may not become a major university priority, but for which funding is available and the competition for funds is not as intense as it is at NSF and NIH (e.g., federal statistical agencies support statistical methods development for national surveys).

Some of these researchers may lack the knowledge required to identify funding sources and develop successful proposals, as is often the case with new assistant professors in research active domains. This problem is readily addressed by existing faculty development programs, outlined in C. Rajan's paper in this volume. They may also face cultural barriers (e.g., negative perceptions of seeking funding, particular research area or funding sources not valued by colleagues), which can be trickier to address.

Supporting proposal development and award management (increasing diversity and opportunity, reducing risk, improving how we function)

Funding streams are becoming more diverse and complex. Today, a large portion of a grant proposal consists of administrative elements that document the capacity of the university and research team and address compliance and regulatory matters. In addition, engaging with larger proposals requires a massive coordination effort.

ISU has a distributed and heterogeneous network of pre- and post-award support. Some colleges and centers have well-developed grant proposal and award staff capabilities. In other parts of campus, available support varies in relation to an academic unit's resource base, which may not be large if grant activity is historically low. Central support for the proposal development process is largely limited to contracted staff and consulting support from VPR staff on larger proposals. To complicate matters, government, industry, and nonprofit/foundation agreements enter the sponsored programs system from three distinct administrative units, which can be confusing to researchers and supporting staff.

We are contemplating a mixed strategy to fill gaps that exist in campus grant support and reduce the burden in preparing and administering sponsored funding. To assist academic units with limited grant support, we are creating a shared pre- and post-award service that will be available to individuals, research groups, and academic units. We are also developing a proposal support system that will serve researchers who wish to submit moderate to large proposals that require good planning and execution and involve interactions with partner institutions. This will be supported with a combination of dedicated ISU and temporary contract staff to address variation in demand for services.

Anticipated benefits of this initiative include more efficient administrative processes in submitting grants and higher quality proposals. We also hope this reduces the barriers for capable faculty to submit proposals for sponsored funding. This concept could be extended to include other services that represent challenges for funded research, such as preparing position descriptions to support hiring as soon as an award is made.

Embracing the innovation chain (increasing diversity and opportunity, reducing risk, improving how we function)

The innovation paradigm links fundamental research to commercial opportunity and is well suited to the land-grant university mission. However, preparing our researchers to engage with the full processes is not without its challenges: we hire researchers for their creativity in knowledge development, and they may not carry an interest in entrepreneurship or commercialization or wish to navigate the contrasting interests of industry and academia.

To address these issues, we are discussing how we evolve our culture and support activities that foster commercialization of research outcomes. This work is being conducted in partnership with ISU's Vice President for Economic Development and Business Engagement. Our main activities have focused on two areas: (1) initiating pilot programs to better understand what training is needed in order for our faculty to be successful in translating their research to commercial applications, and (2) determining what to prepare for as an institution in order to manage risk in the translation process. In our first pilot project, we are recruiting faculty who are interested in entrepreneurship and initiating a mentorship program with local business leaders and angel investors. From this experiment, we hope to identify what kind of support is needed to more efficiently spawn commercial products and businesses from our research efforts. Our second project is designed to help us understand appropriate roles for personnel with dual commitments in conducting research and engaging with start-ups. We are working with a center that has spun off a handful of start-up companies to identify which roles arise and how we wish to separate the academic and business functions to avoid conflict of interest. Finally, we are discussing structures needed to connect industry to campus researchers to address the emerging research needs of businesses.

Responsible research and conduct (reducing risk, improving how we function)

In recent years, the burden, complexity, and risk associated with research conduct and compliance have steadily increased. These forces demand a more coherent approach than we currently have. Fortunately, the ability to investigate and address noncompliance and misconduct works well at ISU. We are now discussing how to address campus culture more broadly to increase researchers' understanding and commitment to responsible research conduct.

Our main work thus far has focused on understanding the landscape and its challenges. The dynamic, conflicting, and arcane regulatory environment makes it difficult for researchers to understand and engage with this responsibility, particularly given their intense workload. Our office also faces issues in keeping abreast of new changes to regulations and evolving roles of faculty (e.g., via start-ups). It can be especially complex to balance the forces of keeping compliance procedures simple and uniform and thus potentially too restrictive versus tailoring the procedures to specific research settings and resolving the resulting confusion and workload associated with a more flexible approach. As we migrate to new software systems for compliance committees, we have an opportunity to evaluate our processes and see if we can reasonably address these forces.

Ultimately, we need to more actively engage campus in a discussion of research ethics and increase our training opportunities for researchers. This work is still ahead of us.