Environmental Change and Adaptation in Kentucky Emerging Research Institution Sponsored Programs Offices: A Multiple Case Study

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Digital Object Identifier: http://dx.doi.org/10.13023/ETD.2016.055

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ENVIRONMENTAL CHANGE AND ADAPTATION IN KENTUCKY EMERGING RESEARCH INSTITUTION SPONSORED PROGRAMS OFFICES: A MULTIPLE CASE STUDY

DISSERTATION

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in the College of Education at the University of Kentucky

By

Scott Matthew Niles
Lexington, Kentucky

Director: Dr. Lars G. Björk, Professor of Educational Leadership Studies
Lexington, Kentucky
2016

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ABSTRACT OF DISSERTATION

ENVIRONMENTAL CHANGE AND ADAPTATION IN KENTUCKY EMERGING RESEARCH INSTITUTION SPONSORED PROGRAMS OFFICE: A MULTIPLE CASE STUDY

The decline in funding allocations to state-supported institutions of higher education (IHEs) in Kentucky has compelled these universities to secure alternate forms of funding to support their capacity to meet public expectations. These other funding streams include increasing enrollment numbers, securing philanthropic support, and acquiring sponsored funding for research projects and programs. While smaller state-supported IHEs face resource and credibility challenges in their pursuit to expand external funding activity, these Emerging Research Institutions (ERIs) continue to strategically bolster their respective research enterprises amid shrinking budgets and increased competition for external funds. Research administration offices are the institutional units responsible for facilitating and supporting the pursuit of sponsored research and are integral to the research missions of these ERIs as an essential structure that enhances the capacity to secure externally sponsored funding. This study explores how external and internal environmental changes influenced adaptive responses, including reconfiguring institutional policies, modifying the role of research administrators, and restructuring offices of sponsored programs to increase the amount of ERI federal research productivity and procurement.

This research employs qualitative methods to gain an understanding of how ERIs adapt to a decline in state appropriations and reconfigure organizational structures and roles to facilitate adaptation. The chief research officer (CRO) and staff of sponsored programs offices (SPOs) at three purposefully selected state-supported ERIs in Kentucky were given pre-surveys and interviewed. Next numerous documents related to each site’s research enterprise were collected and analyzed to understand how sponsored program offices are structured, how duties are officially codified and delineated, and what policies are in place to govern research activity.

Key findings in the study support the importance of upper-administrative knowledge building and leadership in expanding the ERI research enterprise. Additionally, strategic resource allocation, organizational restructuring, a strong policy base and a focus on research development activities are critical elements in bolstering competitive external funding procurement.
KEYWORDS: Research administration, sponsored programs, systems theory, emerging research institution, higher education

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ACKNOWLEDGMENTS

One of the respondents in my interviews told me growing a research enterprise “takes a village.” I think the same can be said for this dissertation. There are many people who have helped make this project a reality.

To my wife, Misty, who has supported me from the first class taken to the final word typed, always encouraging, loving, taking care of our daily obligations when I couldn’t, and believing in me the entire time. I couldn’t have done this without her. To my father, who encouraged me to even pursue this degree. The intelligence, hard work and perseverance he has exhibited in his own life and career kept me motivated even when I felt overwhelmed. To my mother and brother, whose love and support have never, ever waivered, I thank you as well.

A special thanks goes to Professor Lars Björk, my committee chair. His guidance and advice were absolutely critical to seeing this dissertation to its fruition. I will always appreciate his wisdom, his humor, and the way he was always able to clearly explain things and set me at ease when I was overwhelmed, anxious, and doubting myself throughout this journey. Professor Browne-Ferrigno, thank you for your kindness, wisdom and patient guidance when I needed it the most. Many thanks also go to my other committee members Dr. John Nash and Dr. Margaret Mohr-Schroeder for their encouragement and input along the way.

My colleagues at the Morehead State University Office of Research and Sponsored Programs were invaluable allies in this process, providing encouragement, support and sympathy for those late nights after work when they would go home while I stayed to write. I would like to extend my thanks to them. I would also be remiss if I did
not thank my cohort colleagues, who provided support, shared their knowledge, and laughed with me from the first class to the last. I must give special thanks to my cohort member and Morehead State University colleague Rebecca Roach, who has become my surrogate sister throughout this process. Without her insight for the big picture and proofreading of both course assignments and dissertation pieces, I might not be writing this.

Thanks to my research administration colleagues around the country for providing editorial comments, interview protocol review, and general support along the way. In particular, Brigette Pfister, Melanie Hicks, Jennifer Shambrook, Erica Gambrell, Jo Ann Smith, Tammy Murrell and Thomas Roberts were invaluably helpful in the formation of this dissertation, and I thank them all for taking time out of their busy work and home lives to help me.

Finally, to all research administrators around the country who serve as the switchmen and women on the tracks of the research enterprise, this work is for you. You are the all too often unsung heroes of the country’s research success, frequently overworked and overstressed, yet still keeping sponsors happy, your institutions out of trouble, and your faculty satisfied (most of the time). I hope this study will help inform our practice, and help us to do our jobs better.
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CHAPTER 1
INTRODUCTION

Scholars and policy makers have long recognized the unique and symbiotic relationship between the federal government and institutions of higher education (IHEs) in the United States of America (USA) with regard to research. It is characterized by the federal government’s interest in leveraging research and development activities to advance the public good and universities’ interest in acquiring the resources needed to enrich their capacity to conduct research, ensure institutional stability, enhance their prestige and affirm their role in serving the public and nation (Björk, 1983; Justiz & Björk, 1988). The nature and scope of this enduring relationship during the last half of the 20th century is evidenced by IHEs conducting more than half of the country’s basic research that has contributed to an unprecedented level of scientific advancement in the USA (Bush, 1945; Geiger, 1993). Analysts concur that federal research expenditures to IHEs have historically surpassed awards to all other entities (Science and Engineering Indicators, 2014). For example, in fiscal year 2012, IHEs received $65.8 billion for all sponsored research and development activities (Britt, 2013). The federal investment in university-based research is significant and is viewed by IHEs as a major source of revenue.

The dependency of colleges and universities on state and federal government support is as evident as the link between tax revenue and the respective levels of appropriations to IHEs. For example, state-supported institutions are dependent upon appropriations from their respective state governments for a significant portion of their operating budgets. In turn, the health of state and national economies play a large role in
state government funding decisions for these institutions (Kiley, 2013). Both the state and national economies rely heavily on various types of taxes for the majority of their revenue, underscoring the interdependent relationship between tax generation and state expenditures (Campbell & Sances, 2013). Further, political ideology influences state and federal tax policies. Scholars have observed an inherent tension between Democratic lawmakers who tend to favor increasing certain taxes to support the general welfare of the nation, and Republican lawmakers who tend to advance the notion that lower taxes contribute to a stronger economy (Dar, 2012; McLendon, Hearn & Mokher, 2009). Regardless of these ideological differences, tax-reducing legislation engineered by President George W. Bush in 2001 and 2003 not only decreased revenue but when combined with increased military spending following the terrorist attacks on September 11, 2001, “conspired to shift the federal budget balance from surplus to deficit beginning in FY 2002” (Gosling & Eisner, 2013, p. 89), and served to exacerbate the country’s economic woes leading into the beginning of the Great Recession in 2007. Ideologically contested state and federal tax policies resulted in revenue and appropriation reductions to IHEs. In an environment of declining resources, IHEs were forced to seek other sources of income to maintain their viability.

Although the Great Recession officially ended in June 2009 (Gosling & Eisner, 2013), national and state level economies continued to struggle and state funding for publicly supported IHEs declined, falling by an average of 17 percent between 2007 and 2012 (Barr & Turner, 2013). Insofar as state appropriations to these IHEs typically covered 60 to 70 percent of their instructional costs, the decline in state funding had far-reaching ramifications, including tuition hikes, personnel reductions, the elimination of
entire programs, and the expansion of institutional activities to generate additional financial resources (Johnstone, 2011; Kane, Orszag & Apostolov, 2005; McLendon et al., 2009; Powers, 2004). In this resource scarce environment, IHEs were compelled to secure alternate forms of funding to support their capacity to meet public expectations. These other funding streams include increasing enrollment numbers, securing philanthropic support, and acquiring sponsored funding for research projects and programs (Johnstone, 2011). Larger state-supported institutions have both a broad donor base and “research strengths in areas of continuing public investment” (Johnstone, 2011, p. 336), and are consequently more favorably positioned to continue prospering amid declining state support, whereas smaller institutions are placed at risk, facing “declining state tax support . . . higher tuitions, more program closures, and an increasing reliance on part-time and adjunct faculty” (Johnstone, 2011, p. 336).

Despite these economic realities, administrators at smaller institutions are seeking ways to build their capacity to support and conduct research activities. Scholars have observed that administrative decision makers at these institutions are exerting increased pressure on both faculty and staff to conduct sponsored research, procure external funds, and engage in consulting activities to generate additional revenue (Altbach, 2011; Brewer, Gates & Goldman, 2009; Dehn, 2010; Dundar & Lewis, 1998; Kiley, 2012; Kuh, Chen & Nelson Laird, 2007). Traditionally, however, larger, well-established and more research-oriented universities receive the largest share of federal research funds. In fact, research institutions, as defined by Carnegie Classifications, receive 83% of all federal research and development expenditures (Garcia et al., 2009). Further, of the 907 IHEs reporting to the 2012 National Science Foundation (NSF) Higher Education Research and
Development Survey (HERD), which serves as a census of colleges and universities with $150,000 or more in annual research expenditures, the top 10 universities alone received nearly 20% of all federal research funding (NSF, 2013b). Despite this, smaller IHEs have been and continue to pursue federal research funding and expand their respective research programs. Although smaller universities are disproportionately affected by declining state resources and often face perception challenges with respect to the ability to conduct research (Falconer, 2009), they “have a rich history of contributing to our nation’s research excellence” (Ellis, 2009, p. vi).

The Council on Undergraduate Research (CUR) reports evidence of the growing importance of research at smaller universities. CUR was founded in 1978 to enhance research opportunities for faculty and undergraduate students, with a strong emphasis on small, private schools as well as comprehensive universities (CUR, 2011). In addition, the Federal Demonstration Partnership (FDP), an association of federal agencies, academic research institutions and research policy organizations that work to streamline the administration of federally sponsored research, further validated the role of smaller institutions in the country’s research enterprise in 2002 by including them in their cooperative effort. The FDP invited IHEs funded by at least two federal agencies that also receive less than $50 million annually in federal research funding to join. These universities are termed *Emerging Research Institutions* (ERIs) (Garcia et al., 2009) because of the growing need for them to “contribute more significantly to innovative research and . . . the nation’s technological competitiveness” (p. 3).

Sponsored programs offices (SPOs) are the institutional units responsible for facilitating and supporting the pursuit of sponsored research. The research administrators
employed by these offices serve as gatekeepers for all external funding submissions and oversee the purchasing, personnel, accounting, reporting, and other necessary nonscientific research management of external funds. These offices are the conduits through which ERIs pursue sponsored research funding. Moreover, these offices also play a pivotal role in shaping externally sponsored research productivity. Consequently, research administration is integral to the research missions of these IHEs and an essential structure that enhances the capacity of universities to secure externally sponsored funding.

The research administration profession emerged out of the rise in federal research funding to universities in the years following World War II (WWII). As the level of federal research funding flowing to universities grew and compliance requirements became more complex, research administration became a pivotal institutional function (Beasley, 2006). The inherent regulatory realities of external funding are the main contributors to the past and current occupational challenges research administrators face. In addition to increasingly complex regulatory burdens, other challenges include a diversification of duties, an underdeveloped professional preparation structure and occupational stress (Allen-Collinson, 2006, 2009; Beasley, 2006; Katsapis, 2008; Norris & Youngers, 1998; Shambrook, 2010). Smaller institutions such as ERIs face all of these challenges in addition to another unique set of barriers in the attempt to become more research oriented, such as a lack of physical infrastructure, a perception of lower credibility, greater susceptibility to declining financial support, and fewer research administration personnel. These hindrances play a role in the federal funding distribution
sharply skewing toward established, research intensive universities (Atkinson, 2002; Falconer, 2009; Garcia et al., 2009).

**Statement of the Problem**

Complex organizations such as IHEs depend heavily on the external environment for state appropriations, research support and feedback from their constituencies that affirm or disconfirm the correctness of their direction. Consequently, they must be adaptive in order to survive when environmental changes occur (Chance & Björk, 2006). For example, the steady decline in state support for colleges and universities has caused smaller institutions with limited resources to adapt by becoming more entrepreneurial, seeking alternate forms of revenue (McLendon et al., 2009). The increased pursuit of sponsored research funding is one method of generating alternative revenue.

In addition to scanning the external environment, organizations must also be aware of internal feedback, as services provided by a variety of subunits are often exclusively directed to internal customers, and their adequacy may have implications for organizational effectiveness (Bess & Dee, 2008). SPOs at these IHEs are the organizational subunits responsible for securing and managing external funding, and their work is influenced both by their internal and external environments. For example, externally, federal, state and private support for research grants, construction projects, public service projects and creative endeavors come with sponsor obligations, administrative burdens and accountability assurances. Internally, changes in strategic plans for extramural research and the volume of faculty researchers can affect an office’s ability to provide high quality services. These environmental changes are discussed below.
Fiscal Forces Affecting Research Administration

In the past decade, the nation’s economic vitality, federal and state tax policies, and appropriation levels have influenced the national trend with respect to state support for higher education. For example, state support grew between 2004-2008 and then declined after the 2007 recession adversely affected the nation’s economy. While additional funding authorized by the American Recovery and Reinvestment Act of 2009 (ARRA) helped lessen the effect on institutions’ operating budgets between 2009 and 2011, post-ARRA support for state-supported colleges and universities fell by an average of 8% in 2012. This decline disproportionately impacted instruction. An analysis of fiscal support between 2008 and 2012 indicates that educational appropriations per full time equivalent (FTE) student fell by an average of 23% (State Higher Education Finance [SHEF], 2014). Even though some indicators show slow growth in state tax support, a full recovery “will, at best, take several years due to the unprecedented scale of state revenue losses during the recession” (p. 12).

When reductions in state appropriations to IHEs occur, most publically supported universities have limited options through which they may mitigate the shortfall. Some of the most common options include raising tuition, reducing services and personnel, and securing external funding (Johnstone, 2011). With respect to the pursuit of external funding, while not a significant unrestricted revenue generator, this strategy is one that focuses on institutional growth rather than reductions, and as such has seen expansion among the ERI population. One measure of this is found in the NSF HERD survey, where the number of universities reporting increased from 599 in 2003 to 907 in 2012, signaling a rise in colleges’ and universities’ pursuit of federal funding (Britt, 2012). This
increased competition for federal research funds comes at a time when, adjusting for inflation, federal research expenditures to IHEs fell slightly in 2012 for the first time since 1974 (Britt, 2013; Haney, 2014). This reflects a significant shift in research activity and increased competition for funding.

**Regulatory Forces Affecting Research Administration**

In addition to increased competition for extramural funding, research administrators face an increasing level of administrative burden from federal regulatory requirements, which both detracts from the profession’s service-oriented core (Hansen & Moreland, 2004) and affects researchers’ ability to focus principally on research activities (Rockwell, 2009). Federal regulations governing research funding have grown exponentially since the years following WWII, with many of the rules focused on the financial compliance of recipients and subrecipients. However, since the 1970s, the federal government has implemented compliance requirements dealing with individual rights, environmental protections, living organisms, intellectual property, and procurement processes (Norris & Youngers, 1998) that not only served as a driving force in the profession’s proliferation, but also as a catalyst for organizational and structural changes within research administration offices across the country (Hansen & Moreland, 2004).

In an effort to streamline the administrative processes associated with managing federal research funding, the Office of Management and Budget (OMB) proposed a new guidance that combines previously separate circulars into one overarching document. This new guidance called *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, or the *Uniform Guidance*, officially went into
effect on December 26, 2014 (Blum, 2013). While the changes were intended to facilitate efficiency, preparation for compliance with the changes has been a burdensome process for SPOs at IHEs. Further, some of the revisions related to procurement standards and sub-recipient monitoring are “onerous” (Sedwick, 2014, p. 11) and foretell additional burdens for research administrators who support the research enterprise.

**ERI Credibility Issues**

The stagnant economic climate for federal research funding and a rising number of entities competing for those funds have created an extremely competitive environment for all IHEs. ERIs, however, face credibility challenges that serve as an additional stumbling block to procuring external funding. The issue of credibility for ERIs stems from government reliance on major research institutions for national defense-related research in the years leading up to WWII (Geiger, 1990). Those existing relationships continued after the war, and such institutions benefitted from the exponential growth of federal research expenditures during the 1950s and 1960s, a period collectively considered the “golden age of federal funding” (Haney, 2014, p. 50). This allowed these prominent institutions to build an extensive infrastructure for external research (Atkinson, 2002).

Although smaller institutions had a history of conducting research, they did not resolutely begin to seek external funding for research projects, programs and infrastructure until the 1960s and 1970s (Beasley, 2006). Federal funding as a percentage of the IHE budgets had peaked in 1965, and then began to decline during the 1970s (Haney, 2014). Consequently, these smaller institutions had difficulty building the research infrastructure necessary to adequately compete for federal research dollars. ERIs
lack robust internal resources to help bolster research infrastructure quickly, and as state allocations for public institutions continue to decline, state-supported ERIs continue to focus on downsizing programs and personnel as opposed to making significant and continuous investments in developing their research enterprise (Johnstone, 2011). These circumstances inhibited their capacity to successfully compete for research support, proved a hindrance to building institutional research support infrastructures and weakened efforts to enhance public perception of their credibility in conducting research.

SPOs serve as conduits through which institutions adapt to changes in the institutions’ research support environment and contribute to the institution’s research growth and continued viability. Despite the challenges state-supported ERIs face in pursuing and administrating federally funded projects, they continue to work toward building organizational structures that may facilitate research and alternative sources of income. Consequently, it is important to understand both the role of SPOs at ERIs in this emerging context as well as how they are organized to adapt to these changes.

**Theoretical Framework**

Systems theory provides a framework for understanding how an organization adapts to changes in its external environment and may prove particularly useful in explaining how ERIs adapted to declining state appropriations and focused their efforts on building research infrastructures to compete for external funding. The early work of Bertalanffy (1968) posits that living organisms have a symbiotic relationship with their natural environments and as these conditions change, they are compelled to adapt or face extinction. His concepts used to describe natural, biological conditions were adopted by social scientists as a way to describe and explain the relationships between complex
organizations and their environments (Banathy & Jenlink, 2004; Chance & Björk, 2006). Systems theory proposes that organizations work in concert with their external environments in order to survive. This interdependency also suggests that while organizations are compelled to adapt to changes in their external environment, they may do so through a variety of mechanisms. Because organizations are composed of numerous components or subunits they may use them discretely as circumstances warrant or in combination to ensure the wellbeing of the organization. Analyzing the focal organization in its environmental context and observing how subunits may help it adapt to changes may contribute to a comprehensive understanding of this relationship (Phillips, 2011). In sum, as changes take place in the external environment, it is incumbent upon organizations to adapt in order to survive as well as identify new opportunities in which it may thrive (Chance & Björk, 2006).

Thus, systems theory offers a cogent lens through which to understand and explain the dynamic relationship between the organization and its environment and allows researchers to see the “characteristics of the ‘embeddedness’ of educational systems operating at several levels” (Banathy & Jenlink, 2004, p. 47). It provides a useful framework for explaining how external forces may have influenced changes in institutional structures, policies, and administration. Systems theory may enable researchers to understand how declining state appropriations influenced changes in the ERI SPO organizational structures and the work of research administrators as a way to acquire increasingly scarce resources. More specifically, as state allocations to public institutions of higher education decline (environmental shift), officials must find ways to mitigate this shortfall (institutional response). One such response has been a more
dedicated focus on pursuing sponsored research funding. Because sponsored program offices are the entities responsible for supporting institutional research activity, these units are expected to help find ways to increase research productivity and generate alternative sources of revenue. In other words, when ERIs are faced with declining resources, they are compelled to adapt by making structural changes. Katz & Kahn (1966) observe that systems theory may help to explain why organizations can only survive and thrive in the midst of environmental changes when the organization itself also undergoes changes.

**Study Purpose and Significance**

Systems theory is a broad conceptual framework undergirded by the assumption that organizations are complex entities “continuously changing in pursuit of equilibrium with their external environment” (Chance & Björk, 2006, p. 126). Through this lens, researchers can learn how changes in the environment affect complex organizations such as IHEs and their structures. Thus, the broad purpose of this study is to understand the relationship between decreases in state appropriations and changes in ERIs. More specifically, the study examines how these external environmental changes influenced adaptive responses including reconfiguring institutional policies, modifying the role of research administrators, and restructuring SPOs to increase the amount of ERI federal research productivity and procurement (NSF, 2012a).

Extant peer-reviewed literature on non-research intensive IHEs and the pursuit of sponsored funding tends to be broad in scope. Scholars concur that there is a paucity of work that provides an in-depth focus on SPOs or research administrators (Bailey, 2011; Carr, McNicholas, & Miller, 2009; Hamilton, 2010; Kane, 1999; Montoro, 2010;
Muhammad, 1996; Waite, 2012; Wetherholt, 2013). There are few studies that use qualitative methodology to obtain rich descriptions and analysis of work from the perspective of these postsecondary administrators (Bailey, 2011). Moreover, given the escalation in IHE competition for extramural funding, this study of ERI SPOs is at once timely and significant. Importantly, it has the potential of making a contribution to the existing knowledge base on how ERIs may adapt to a decline in state appropriations and understand how research administrators reconfigure organizational structures and their roles to facilitate adaptation. Although study findings may not be generalizable to a larger population of ERIs, they may provide insight into how some institutions and administrators successfully supported their institutions’ goals.

Importantly, as smaller state-supported IHEs work strategically to position their institutions as research-oriented universities and become more competitive in securing external funding, they do so while facing numerous obstacles. However, the FDP decision to include ERIs in its efforts to improve the national research enterprise may be viewed as a significant turning point in practice and in scholarly work. Studies that capture the dynamical relationship between the external environment and are focused on understanding how ERIs adapt by seeking research growth may expand current literature. At the very least, it reframes these organizations as positive and adaptive if not forward thinking as they deal with issues of resource scarcity in a highly competitive context.

In addition, as the conventional nomenclature of such institutions (e.g. Predominately Undergraduate Institutions, Comprehensive Schools, Regional Universities) tends to highlight limitations and smaller stature, scholars suggest that the ERI designation may not simply describe where the institution is presently situated, but
where it intends to go in the future (Garcia et al., 2009). In this regard, understanding research development and management work of research administrators from their perspective as they work in this dynamic funding environment may shape their future roles and thus make an important contribution to the profession.

**Research Questions**

The research questions guiding this study are as follows:

1. In what ways has the decline in state appropriations to selected Emerging Research Institutions in Kentucky influenced the work of their sponsored programs offices?
2. How have changes within sponsored programs offices at selected Emerging Research Institutions in Kentucky affected the procurement of external research funding?

These questions provided an initial framework that guided the development of the study design. During the study, it became evident that the emerging data did not seamlessly align with these questions. Instead, I used a thematic approach grounded in categories that emerged from that data.

**Study Design Overview**

A case study design approach is the method often used when researchers are interested in understanding individual or group phenomena (Yin, 2009). This method is relevant to the study because the topic is a bounded “empirical inquiry . . . [and] a contemporary phenomenon within its real-life context” (Yin, 2009, p. 18). Further, a case study methodology is appropriate when “a ‘how’ or ‘why’ question is being asked . . . over which the investigator has little or no control” (p. 9). A case study approach yields a
rich and detailed description of how SPOs are adapting to environmental changes. The phenomenon studied is the pursuit of extramural research funding and the bounded system is SPOs. The three purposefully selected Kentucky ERIs included institutions that have experienced a decline in state appropriations and substantial increases in federally funded research expenditures between 2003-2012, and thus offered an opportunity to study the phenomena (NSF, 2012a).

This multiple-case study examined how research administrators at these Kentucky ERIs are contributing to their respective institutions to adapt to a decline in fiscal resources by changing the internal organizational structure of their SPOs, their roles and the nature and direction of work. In addition, the study examined external influences on these offices, including external regulatory changes and funding patterns that increase the complexity of work and workload. Onsite and phone interviews with SPO staff members at each institution served as the primary data collection method and provided a robust picture of how each SPO operates, how fiscal and regulatory changes have affected their work, and in what ways they pursued growth in this environment. Additional data was derived from official documents related to each institution’s research enterprise, including strategic plans, institutional policies regulating sponsored programs activity, organizational charts, job descriptions of research administration staff, and annual reports of grant and contract activity.

**Potential Limitations**

A study of research administrators at ERIs neglects the larger population of IHEs in the USA, as the vast majority of them conduct some form of federally funded research and thus have SPOs. Additionally, this study excludes the perspectives of research
administrators who exist in non-academic settings such as private research laboratories, non-profit organizations and federal and state agencies. In addition, findings may relate only to the perceptions of research administrators at the three selected institutions. This, combined with the study’s qualitative methodology, results in findings that may be generalized only to those institutions studied and cannot be generalized to either the national population of research administrators or the national population of colleges and universities. Regardless, this study’s findings contribute to the scant knowledge base on research administration at ERIs.

While research administrators and SPOs play a significant role in the research enterprise of ERIs, they are not the only institutional entities involved. Ultimately, the procurement of external research funding also depends on the faculty and academic staff that formulate ideas and proposals to external agencies. In turn, academic chairs and deans with control over departmental budgets and course assignments can either stimulate or restrict the flow of faculty proposal submissions. An institution’s administrative leadership can also affect research through the creation of university-wide strategic plans, as well as the formation and enforcement of institutional policies related to research. This study did not take into account these critical perspectives. As such, additional exploration focused on examining all institutional units involved is a necessary next step in understanding the ERI research enterprise.

**Dissertation Organization**

Chapter 2 provides a review of literature on the origins of research administration at IHEs and the growth of the profession. A description is presented of the current challenges faced by all research administrators as well as challenges unique to ERIs. The
general federal economic conditions between 2003-2012 are discussed as they relate to state economies and support for higher education, with a focus on the target state of Kentucky. Systems theory as a theoretical framework undergirding the study is also presented.

Chapter 3 describes the research methodology used to conduct the multiple-case study. A description of the site selection criteria is presented, as well as a description and rationale for both participant and document selection. The researcher’s plan for the protection of human subjects involved in the study is presented. Data analysis techniques are also discussed. Additionally, quality assurance and the role of the researcher are discussed. Chapter 4 presents study findings that are guided by the research questions and organized across six key overarching themes. Chapter 5 discusses the researcher’s conclusions, implications for practice, and offers suggestions for future research.
CHAPTER 2
LITERATURE REVIEW

The economic decline that began in 2007 in the United States of America (USA) referred to as the Great Recession contributed to sharp declines in state-level revenues and severe cuts in appropriations to state-supported institutions of higher education (IHEs) (Center on Budget and Policy Priorities [CBPP], 2013; State Higher Education Executive Officers [SHEEO], 2014). This decline in state budget allocations was particularly difficult for small, state-supported Emerging Research Institutions (ERIs) that lack the resources and capacity of larger universities to pursue external resources to help offset budget reductions (Johnstone, 2011). While universities used a wide array of strategies to generate additional revenue, many ERIs focused on expanding efforts to secure sponsored research funding by developing or enhancing research infrastructures. This strategy not only positioned them to secure external resources but also to attract quality faculty and expand student enrollment (Dundar & Lewis, 1998). During the past decade, scholars have observed an increasing number of ERIs adopting revenue-generating strategies, particularly with regard to their pursuit of federal research funding.

As state-supported ERIs continue to pursue the growth of externally sponsored research in response to declining state budget allocations, the role of research administration at these institutions has become increasingly more important. These circumstances have heightened interest in examining the origins and development of research administration functions and sponsored programs office (SPO) structures in ERIs. Research administration encompasses diverse responsibilities that stem from two management areas: “[T]he conduct of research and its impact on the entire organization,
and . . . the oversight and compliance of the sponsor’s management and fiscal requirements stated in the grant or contract” (Beasley, 2006, p. 9). These academic organizational subunits initially provided internal clerical support functions to assist in proposal submission and financial computation (Norris & Youngers, 1998). However, a sharp increase in federal research funding during the 1950s and 1960s increased the complexity of the regulatory environment and had a profound influence on the nature of work and structure of SPOs.

Although the federal government awards research funds to numerous organizations such as private research facilities, teaching hospitals, and government laboratories, their expenditures to IHEs in the USA consistently surpass awards to all other entities (Science and Engineering Indicators, 2014). At the same time, the proliferation of university research has had a profound effect—in both positive and negative ways—on institutional missions, graduate education, and administrative procedures (Norris & Youngers, 1998). As the federal government’s financial support for IHE research activities is an outgrowth of its science policies, a full comprehension of research administration and its origins requires an understanding of federal science policy history.

**Federal Research Policy: A Brief History**

The federal government’s efforts to support research were largely unorganized until the 1940s; however, the idea of supporting arts and sciences development dates back to the 1787 Constitutional Convention, where several delegates advocated for Congressional assistance to various projects that would advance knowledge and stimulate commerce (Beasley, 2006). While these provisions were not incorporated into the final
draft of the Constitution, Article I, Section 8 established the beginnings of patent and copyright law for the purposes of scientific progress. The entry stands as the first codified reference to research activity in American history. Congress continued to support and build a national science infrastructure throughout the 19th century in a variety of ways. The Smithsonian Institution was established as a public-private institution in 1846 to stimulate scientific research and later received federal funds to further its mission. The Morrill Act of 1862 “provided each state with land to build a college with emphasis on developing the agricultural and mechanical arts” (Beasley, 2006, p. 10). Known as land grant institutions, these colleges were created with the intent to specialize in applied versus classical education. When the second Morrill Act of 1890 supplied these institutions with operating grants, it laid the foundation for “research programs and experiment stations in agriculture, the sciences and engineering” (Bailey, 2011, p. 15).

In 1863, President Lincoln signed an act incorporating the National Academy of Sciences (NAS) with the goal of creating an organization that could assist the government with science-related issues (Beasley, 2006). NAS, however, essentially became “a quasi-government agency at the government’s expense to conduct research for the federal government” (p. 10). In 1884, Congress formed the Allison Commission and charged the NAS with investigating the feasibility of forming a national science policy. While the commission recommended the creation of a Department of Science, Congress ultimately rejected the report “on the basis that centralized agencies were not generally in the best interest of the nation” (Bailey, 2011, p. 16).

Throughout the 19th century, the relationship between the federal government and IHEs in the USA with respect to research and funding remained disorganized at best,
with no federally authorized managing entity (Beasley, 2006). At the same time, the level of research funding granted to universities was not significant enough to require research administration functions. Nevertheless, the association established “an operational precedent that has greatly shaped the relationship between the federal government and universities that undertake research activities for the government” (Björk, 1983, p. 9). It was the onset of World War I (WWI) that not only focused the government’s research efforts on developing military capacity, but also impelled the government toward a centralized and formalized research management structure (Beasley, 2006).

During WWI, the government established the Naval Consulting Board (NCB) in an effort to improve military technology, as well as the National Research Council (NRC) in order to encourage research focused on national defense. While neither entity proved successful during the war, their establishment demonstrated that “a team approach to science research and a working relationship with the federal government were essential to achieving results” (Beasley, 2006, p. 11). Moreover, the increased visibility of university research began to help it be perceived as not only useful for national defense, but also as “a valuable asset in finding solutions to long-term economic and social problems” (Justiz & Björk, 1988, p. 2). The threat of another war would again drive federal policymakers to explore a national model for coordinating research.

When World War II (WWII) began in 1939, President Franklin D. Roosevelt proactively prepared the nation for its involvement. Part of this preparation again included the mobilization of the country’s scientific resources for national defense purposes (Beasley, 2006). To lead this effort, President Roosevelt sought assistance from two leaders in the scientific community: Vannevar Bush, President of the Carnegie
Institute and former Vice President and Dean of Engineering at the Massachusetts Institute of Technology (MIT), and James B. Conant, an organic chemist and President of Harvard University (Beasley, 2006).

As head of the Carnegie Institute, Bush granted institutional funds to develop and grow research programs around the country, was familiar with the nation’s leading scientists and research programs, and “more than anyone else in the nation . . . was aware of the state of scientific research and the individual scientists at the forefront of discovery” (Beasley, 2006, p. 12). In 1940, Bush prepared a paper for President Roosevelt encouraging the creation of a new federal organization tasked with directing the nation’s research efforts for the war. In response, the president created the National Defense Research Council (NDRC) on June 27, 1940 and provided it emergency funding in order to coordinate defense-related scientific research by developing contracts for work with private research firms, industrial laboratories, and universities. As NDRC chair, Bush chose like-minded and accomplished scientists as committee members, thus representing “a new generation of leadership in American science” (Geiger, 1993, p. 4).

Under the NDRC’s direction, the federal government increased its reliance on the nation’s brain trust of university scientists for national defense efforts, ushering in a new era of collaboration in the name of advancing scientific knowledge. From this point forward, the federal government became “dependent upon civilian scientists in industry and universities for a substantial portion of the basic and applied research relevant to its many interests” (Geiger, 1993, p. 13).

As NDRC activities continued to require additional funding, the government reorganized its federal research organizational structure in 1941. The NDRC remained
intact, with Conant appointed as chair. In addition, the government also established the Committee on Medical Research (CMR) and the Office of Strategic Research and Development (OSRD). OSRD became an overarching, Congressionally funded entity led by Bush (Beasley, 2006; Geiger, 1993). This configuration remained in place throughout WWII and proved to be highly efficient and successful, resulting in a variety of medical, scientific, and defense advances such as penicillin, radar technology and development of the atomic bomb. Simultaneously, Bush and the OSRD developed a model for the coordination of federal research funding that would continue after the war:

In addition to its research and development accomplishments, OSRD also developed the system for procuring and managing research awards. Through contracts, the government established the rules for project goals, financial management and reporting. The basic management agreements between the sponsoring agencies and the research laboratories were developed as part of the OSRD management system. (Beasley, 2006, p. 13)

OSRD’s success during WWII prompted President Roosevelt to task Bush with exploring ways to continue the expansion of scientific research beyond WWII (Beasley, 2006). In response, Bush, with assistance from four committees he assembled, compiled a series of recommendations into a 1945 report titled, *Science: The Endless Frontier*. In this report, which suggested forming a new federal agency to support general scientific progress, Bush argued that the best way to catalyze commerce and improve the health and education of the nation was by funding basic scientific research, which served as the essential building blocks of all scientific advancement (Geiger, 1993). Another important aspect of OSRD during WWII is that it created a scenario for IHEs that necessitated the management of a large amount of non-research related requirements such as budgeting, accounting, reporting, and personnel management. Many of the individuals performing
these tasks became “the first wave of research administrators after the war” (Beasley, 2006, p. 13).

Despite Bush’s desire to create a unified federal system of research management, legislation to establish a national research foundation was met with resistance in Congress, where Democratic Senator Harley M. Kilgore of West Virginia raised opposition to key details of the enacting bill (Beasley, 2006). While Sen. Kilgore agreed with the basic tenets of a singular agency, he wanted the proposed foundation to report directly to the president instead of being run as a civilian science agency. In addition, the senator also opposed the exclusion of the social sciences and desired to distribute federal research awards geographically. Eventually, a compromise bill passed in 1950, establishing the National Science Foundation (NSF) as an organization controlled by a director, and a National Science Board comprised of presidential appointees. Grant awards, however, would be awarded by merit, not geography. During the five-year period between Bush’s report and the establishment of the NSF, other federal entities created new or authorized existing agencies to offer research support. These included the Office of Naval Research (ONR), the National Institutes of Health (NIH), and the Atomic Energy Commission (AEC), thus creating “a pluralistic system [that] is still in place as the national research policy” (p. 16).

**Genesis and Growth of Research Administration**

Concurrent with the expansion of federal granting agencies was an increase in the federal appropriation of research funds, as the government was now interested in funding peacetime research. This influx of federal research funding to IHEs in the years following WWII came with little direction, regulation, or financial compliance requirements (Norris
Furthermore, requirements related to proposal submissions were minimal, with no specification of format, length, deliverables, or deadlines. However, as each agency established its own procurement process, grant and contract recipients were required to follow a variety of varying application, budgeting, and reporting requirements. The combination of increased funding and a diversification of rules required “recipient institutions . . . to create research administrative systems and employ qualified people to manage research programs” (Beasley, 2006, p. 17).

As the level of federal research funding flowing to universities continued to increase, so also did the need for purchasing, personnel, accounting, reporting, and other nonscientific research management duties. Academic and business functions related to the influx of funding merged because “academic leaders were concerned about the research goals of the institution . . . [and] business officers were concerned about the terms of the grant or contract and the management of awards” (Beasley, 2006, p. 17). Research administration emerged as a new administrative unit combining these interrelated functions.

Originally, most IHEs staffed a centralized research administration unit headed by a vice president, dean, or director. Later, this structure shifted to more decentralized models as research productivity grew, establishing research administrators at the department level where necessary to handle high volumes of research activity (Beasley, 2006). Today, most colleges and universities have an office responsible for the facilitation of external funding, and it is known by a variety of titles, such as Sponsored Research Office, Office of Research and Sponsored Programs or Office of Sponsored Projects Administration. The term sponsored is included to emphasize the fact that
funding comes from a variety of local, state, federal, and private sources. Regardless of the name or structure, the research administrators within these offices were inherently situated in a mediator role, operating in a “milieu consisting of the researcher, the institution and the sponsor” (Beasley, 2006, p. 18). The first groups of university research administrators were either scientists or science administrators who previously worked at the federal level. Post-WWII growth in research funding, however, would drastically alter this landscape, necessitating an immediate need for additional research administrators.

For example, between 1958 and 1968 alone, federal research and development expenditures to IHEs increased from $254 million to $1.57 billion (Graham & Diamond, 1997). By comparison, in fiscal year 2012, the federal government allocated more than $143 billion to all research and development activities, with $59 billion alone in non-defense activities (Boroush, 2014).

Both the increase in federal funding for research and the expansion of regulations for the conduct of research caused IHEs to either expand existing academic research personnel or establish offices of research administration. These institutions included previously teaching-oriented state colleges and universities that were shifting toward a more research-oriented structure (Beasley, 2006). To fill the gap, the pool of potential applicants expanded beyond scientists and federal contract workers to include those with military, business, or other private industry backgrounds (Beasley, 2006; Graham & Diamond, 1997). An additional upsurge in academic research administrators occurred in the 1970s and 1980s as community colleges, smaller IHEs and private institutions began to pursue federal funding for projects and research to support their unique missions (Beasley, 2006).
University research administration continues to experience significant growth as an increasing number of IHEs pursue federal research funding. The number of universities reporting to the NSF Higher Education Research and Development Survey (HERD), an instrument that compiles information on annual federal research and development expenditures to institutions of higher education, increased from 599 in 2003 to 907 in 2012 (Britt, 2012). Another indicator of the profession’s growth is found in the membership of the two largest research administration professional development associations. As of June 24, 2015, the National Council of University Research Administrators (NCURA), which was founded in 1959 with 45 initial members, had 7,782 active members listed in its database (Beasley, 2006; NCURA, 2015). As of June 24, 2015, the Society of Research Administrators (SRA), which was founded in 1967 with 100 initial members, had 3,841 members listed in its active database (Beasley, 2006; SRA, 2015). As the profession continues to grow, the increased need for professional development has emerged; demonstrative of this need is the recent establishment of specialized master’s degrees in research administration at several IHEs across the country (Smith & Torres, 2011). Such a move is timely, given research showing the majority of practitioners are nearing retirement age (Shambrook & Roberts, 2011).

As IHEs continue to grow their respective research enterprises, the need for research administrators to manage the non-academic elements of procuring and conducting research will remain strong, portending further growth of the profession. Despite this optimistic outlook and the relative newness of the profession as a legitimate and necessary higher education administrative function, the field faces several challenges. Beholden to a variety of environmental forces, research administrators must adapt to an
ever-changing regulatory and funding landscape to ensure the continued success of institutional research missions (Beasley, 2006; Norris & Youngers, 1998).

**Challenges in University Research Administration**

Regardless of institutional size or type, university research administrators in SPOs face common challenges. Most of these issues stem from the complexities inherent in being recipients of federal funds. Some problems, however, are a product of the function’s relative infancy.

**Regulatory Burden**

As the federal government increased its research funding allocations to IHEs in the decades following WWII, it initially did so with few regulatory requirements for recipients (Beasley, 2006). Eventually, the government recognized the need for stewardship in this arena and accelerated efforts to codify administrative oversight on federal awards. In 1958, the Bureau of the Budget (the predecessor to the Office of Management and Budget, which formed in 1970) issued Circular A-21, which outlined principles for determining applicable costs on federal awards (Graham & Diamond, 1997). Congressional attention toward building a regulatory structure for federal research funding continued with a 1966 Bureau of the Budget report recommending numerous requirements focused on formulating administrative and accounting standards for federal research management (Norris & Youngers, 1998). From this point on, research administrators began to focus as much on regulatory compliance and accountability as the core functions of proposal support and preparation. When many of the recommendations from the report were incorporated into the Office of Management and Budget (OMB)
Circular A-110 (issued in 1976), it created a new host of regulatory burdens for IHEs; however, just as importantly,

This circular provided a framework for administrative management of awards, was a catalyst in institutional development of sponsored programs offices and, in some cases, of the beginning movement toward combining pre-award and post-award sponsored programs functions into a single office. (p. 36)

Regulatory changes continued throughout the 1980s, “most coming in a series of unfunded mandates grounded in legislative requirements” (p. 38) that placed additional burdens upon research administrators by instituting new procedural requirements for the management of existing compliance policies related to conflicts of interest, scientific misconduct and controlled substances. Another landmark change occurred after a federal investigation revealed that throughout the late 1980s and early 1990s, Stanford University had “serious deficiencies in . . . cost allocation and charging practices . . . [leading] to significant overcharges to the government” (Socolar, 1991, p. 3). Some of the more notorious findings included depreciation costs erroneously charged to the university’s yacht and unallowable direct charges for “cedar closet liners and cabinets, floral arrangements, sterling silverware and other silver items for the President’s House” (p. 6). In light of these findings, changes to how institutions can calculate the administrative portion of indirect costs, the “specification of cost categories as either direct or indirect” (Norris & Youngers, 1998, p. 39), and new certifications for the use of research facilities added yet another administrative burden for research administrators.

In February 2013, OMB proposed the Reform of Federal Policies Relating to Grants and Cooperative Agreements; Cost Principles and Administrative Requirements (Blum, 2013). Termed the Uniform Guidance by research administrators, this sweeping change to the regulatory structure governing federal grants was intended to streamline
requirements for federal awards by combining existing OMB Circulars. However, the proposed guidance, which went into effect December 26, 2014, also instituted a variety of changes that will require research administration professionals to revise internal processes and policies. For example, institutions will have to abide by more prescriptive procedures for the procurement of services and equipment. In addition, clerical costs normally encapsulated in an institution's indirect cost recovery may be requested as a direct cost in an application for federal support under specific conditions (Morgan, 2014).

Increasing regulatory burden has also adversely affected faculty and staff grant recipients, as evidenced by the results of the 2005 Federal Demonstration Partnership (FDP) Faculty Workload Survey. A consortium of federal agencies and academic institutions, the FDP formed in 1988 for the purpose of addressing administrative burdens in academic research. This survey of more than 6,000 faculty at 73 IHEs in the USA found that respondents reported spending 42 percent of time allocated to sponsored research projects on administrative activities alone (Rockwell, 2009). The FDP Faculty Workload Survey was again distributed in 2012 with the same results, “suggesting little change since the original survey was conducted” (Schneider, Rockwell, Shaver, & Brutkiewicz, 2012, p. 6). The consequences of this increased faculty burden included a decline in communication between research administrators and faculty and relationships that are antagonistic instead of collaborative (Hansen & Moreland, 2004).

Role Diversification

At the outset, the principal duties of the research administrator involved service-oriented tasks for grant seekers, including funding source location, proposal and budget editing, institutional approval and contract negotiation (Beasley, 2006; Hansen &
Moreland, 2005; Norris & Youngers, 1998). As federal regulations increased, SPOs found it necessary to either train existing staff or hire new staff to handle specialized roles. Research compliance specialists emerged to manage Institutional Review Boards, animal care and use committees, conflict of interest regulations, and other duties related to the responsible, ethical and legal conduct of research. Many IHEs hired information technology specialists when federal agencies moved submission and reporting processes online to manage the electronic aspects of research administration. Universities hired dedicated financial administrators to manage the accounting aspects of federal awards.

Additionally, while IHEs in the USA have been developing intellectual property from federal awards as early as the 1920s, universities had to seek title rights waivers from the funding agency in order to profit from their work (Berman, 2008). The implementation of The Patent and Trademark Law Amendment Act, more widely known as the Bayh-Dole Act (1980), allowed universities to pursue ownership of the intellectual property resulting from their federally sponsored research. As a result, patenting and licensing activity sharply increased, necessitating staff with legal, intellectual property and technology transfer expertise.

Hanson and Moreland (2004) argue that this role diversification is “an abrasive force, grinding and wearing away the original principles of research administration” (p. 46). In recent years, many research administration offices have created separate units dedicated to research development activities such as proposal and program training, proposal writing, and building interdisciplinary research teams (Mason & Learned, 2006; National Organization of Research Development Professionals [NORDP], 2014). NORDP was founded in 2010, underscoring the increasing importance of these functions,
which closely mirror the role initially envisioned for research administrators. These research development strategies have shown success in fostering an institutional culture of research and in expanding research productivity (Conn, Porter, McDaniel, Rantz, & Maas, 2005). Consequently, the proliferation of research development functions at IHEs may also be viewed as a response to declining state appropriations and flat federal research funding expenditures (Mason & Learned, 2006). As regulations and other forces change the nature of federal funding, research administrators will most likely continue to be challenged by increasing role diversification.

**Occupational Stressors and Institutional Culture**

As research administrators continue to face continuing regulatory burdens and increased role diversification, universities have simultaneously struggled to clearly and consistently define the roles, job duties, qualifications and career structures that ultimately define the status and place of research administrators within their institutions (Allen-Collinson, 2006, 2009; Shelley, 2010). This has created a sense of role ambiguity among research administrators that has spurred studies about occupational identity and its implications in the profession (Allen-Collinson, 2006, 2009; Shelley, 2010; Whitchurch, 2006; Whitchurch, 2008). Further, many studies have analyzed the concept of occupational stress among research administrators in academia (Katsapis, 2008; Shambrook, 2010; Shambrook & Mintzer, 2007), with the general conclusion that role ambiguity and role overload are two main causes of stress among practitioners.

One potential cause of the reported sense of role ambiguity among research administrators is the profession’s relatively unique status as a *blurred* or *blended* profession, meaning research administrators regularly interact with both academic and
administrative faculty and staff in a scholarly capacity because of their special skills and subject matter expertise (Allen-Collinson, 2006; Shelley, 2010). Tensions between research administrators and faculty stem from preconceived notions one group has of the other; for example, Allen-Collinson (2006) found that research administrators characterized faculty as unreliable and unable to follow required procedures, while faculty characterize administrators in general as bureaucratic, focused on processes versus substance. Indeed, bureaucracy is a large portion of research administration, and another source of tension among faculty who believe research administrators exist only to “comply, consent and resist” (Allen-Collinson, 2009, p. 944). As “messengers of the bureaucracy” (Allen-Collinson, 2006, p. 280), research administrators often face the ire of faculty when communicating institutional and funding sponsor policies.

While SPOs within IHEs work with faculty and staff across institutional units and departments, they are also their own self-contained administrative unit. As such, they must navigate an institutional culture where each department or subunit tends to promote its own interests instead of broader institutional ones (Keeling, Underhile, & Wall, 2007; Kuh, 1996). At the same time, research administrators tend to exist predominately in a culture of compliance, working in a “constant pressure-driven environment” (Lowry, 2011, p. 10) to meet both faculty, administrative, and sponsor demands. The intersection of these competing interests is often a source of friction between research administrators and faculty.

**Challenges Unique to State-Supported Emerging Research Institutions**

Beginning in the 1960s and 1970s, smaller IHEs previously focused on teaching made the move toward initiating and expanding their respective research enterprises. This
was driven by the opportunity to secure external funding, and is further explained by Beasley (2006):

While most of these institutions were not considered major research universities, many sought to become more research-oriented. As a result, many training opportunities were developed that would assist them to achieve this goal . . . [they] sought support for projects such as institutional grants for laboratory equipment, curriculum improvement, and research grants for faculty. (p. 20)

More recently, Boyer’s (1990) seminal work on redefining scholarship at colleges and universities has influenced the roles of faculty at small and mid-sized institutions, particularly with regard to scholarship in the area of teaching and learning. Faculty were encouraged to “carve out their own distinctive missions” (p. 63), and explore the integration of quality teaching, innovation, and application of knowledge. Additionally, Boyer argued that the teacher-scholar model translates to student success. At institutions where faculty involve undergraduates in their research activity, students are more engaged in the classroom and show both improved grades and critical thinking skills (Kuh et al., 2007). While research-intensive universities and medical schools are the typical entities that conduct transformative and translational research with the potential to produce significant advancements in science, the Council on Undergraduate Research (CUR) supports its development at smaller institutions for the benefits to faculty, student learning, and curriculum (Withers & Detweiler-Bedell, 2010). These factors motivated smaller institutions to pursue research and sponsored program funding. However, despite the perceived benefits and desire to increase sponsored research productivity, the push by ERIs to expand their research infrastructures has been hampered for myriad reasons.

In addition to the aforementioned issues faced by all SPOs, smaller state-supported IHEs attempting to become more research oriented have faced several unique
barriers to expanding their research enterprises. These challenges include a lack of physical infrastructure, a perception of lower credibility, greater susceptibility to declining financial support, and fewer research administration personnel. All of these aspects play a role in the federal funding research and development distribution skewing sharply toward established, research-intensive universities (Atkinson, 2002; Falconer, 2009; Garcia et al., 2009).

**Infrastructure and Credibility**

During WWII, the federal government worked largely with the nation’s most prestigious universities because they employed the most accomplished researchers and had the expertise to undertake work related to national defense needs (Geiger 1990, 1993). After the war, these relationships continued and expanded, giving institutions such as the Massachusetts Institute of Technology, Harvard University, Columbia University, and Johns Hopkins University a distinct advantage in terms of procuring and managing federal funds for research (Atkinson, 2002; Geiger, 1990). Today, this trend continues with institutions grouped under The Carnegie Classification of Institutions of Higher Education as research universities with *very high research activity* (RU/VH) receiving the greatest share of federal grant funds. According to the 2012 NSF HERD survey, the top 30 recipients of federal research funding accounted for 40% of total expenditures to all 907 reporting IHEs (Britt, 2013).

As a result, the institutional culture at these RU/VH institutions is one in which research is an integral part of the academic enterprise, and one where administrators place a significant emphasis on faculty research productivity. In such institutions, administrators offer not only incentives to those who can secure external funding and
publish in peer-reviewed journals, but also punishments, such as employment suspension and large course loads, for faculty who do not engage in what is perceived as enough research activity (Edwards, 2010; Tuchman, 2009). At the same time, however, existing policies and structures at these institutions provide significant support to grant-seeking faculty in the form of reduced teaching loads, well-equipped research laboratories, and extensive administrative support for the managing of research funding.

Smaller colleges and universities began working in earnest to pursue sponsored research at a time when federal research funding to higher education leveled off and when regulatory changes tied to the management of federal funding created increased administrative burdens (Graham & Diamond, 1997). This ill-timed move put smaller institutions at a disadvantage when competing for funding and building the necessary administrative infrastructure for research. This problem was compounded by the fact that “the more prestigious universities were able to organize their research administrative [structures] at an earlier date than other universities,” (Atkinson, 2002, p. 4) exacerbating the administrative disparity between larger and smaller IHEs in terms of managing externally sponsored research.

Large institutions were thus able to acquire large physical infrastructures to enhance research, such as equipment and laboratory space. This in turn allowed them to attract prominent research faculty, which resulted in increased grant and contract success (Falconer, 2009). The infrastructure imbalance created not only a federal research and development wealth inequity, but also a “credibility gap” (Garcia et al., 2009, p. 9), since “resources create reputations, and reputations influence resource allocation” (Falconer, 2009, p. 46).
Susceptibility to Funding Reductions

Even as the economy struggles to recover from the 2008 financial crisis, state funding for public postsecondary education continues to decline. This is due in part to the increased demand for higher education brought on by a weak job market and by states shifting financial support to health care and K-12 education (Dar, 2012; Kane, Orszag, & Apostolov, 2005; McGuinness, 2011; Trostel & Ronca, 2009). Even though many states are starting to restore higher education funding, levels remain below pre-recession totals, causing state-supported IHEs to raise tuition, cut spending, lay off employees, reduce services and eliminate programs (Mitchell, Palacios, & Leachman, 2014). In this environment, smaller state-supported IHEs have fewer resources when compared to their larger counterparts and face a greater prospect for deep spending cuts (Johnstone, 2011).

A reduction in state-level funding to IHEs has occurred concurrently with a decline in federal research funding to universities since the American Recovery and Reinvestment Act (ARRA) was implemented in 2009. In 2011 alone, federal science and engineering expenditures to universities dropped by 11% (Yamaner, 2014). This resulted in fewer federal awards, which in turn significantly affects smaller institutions’ ability to procure awards. In addition, the steadily increasing number of proposals submitted to federal agencies for funding by universities, teaching hospitals and other private research institutions creates even more competition. For the NIH alone, the number of applicants submitting proposals increased by 50% between 2002 and 2012 (Rockey, 2013).

Lack of Administrative Personnel

Many small IHEs either have no administrative structure in place for sponsored research or have a minimally staffed one, making the pursuit of external research
opportunities incredibly difficult for faculty (Garcia et al., 2009). This lack of support can also affect small IHEs in research collaborations with other more established institutions, as they often expect quick turnaround for documents like budgets, subcontracts, assurance statements and other items related to the administrative management of research. Garcia et al. (2009) noted that the hiring of one person to handle research administration duties increased an institution’s proposal submissions from 5 to 10 per year to more than 140 per year.

SPOs at smaller institutions are by nature typically smaller than those at larger universities; consequently, changes to the regulatory environment and mandates to increase research productivity can be more burdensome. The challenge for research administrators at small IHEs with limited resources is to continue to facilitate and expand the research enterprise while properly adhering to ever-changing regulations and compliance requirements, and also give consideration to the teaching focus often inexorably connected to the institutional mission (Hansen & Moreland, 2004; Lowry & Hansen, 2001).

While the federal government and IHEs in the USA have a long-standing history with respect to research, the research administration function is comparatively new. As the ERIs continue to expand efforts to obtain external research funding, research administrators in state-supported ERIs will continue to face the previously described challenges to building the research enterprise at their respective institutions. Even though events in the external environment have in part triggered this institutional response, they simultaneously pose a challenge to state-supported ERIs that rely on state funding for a significant portion of their operating budgets.
Economic Conditions and Higher Education Funding

Organizations are in constant interaction with their external environment, and are typically dependent upon those external influences for survival (Katz & Kahn, 1966). When changes in the environment occur, organizations such as IHEs must learn to adapt in order to maintain vitality. For state-supported ERIs, a decline in financial resources led to a variety of organizational changes. In order to understand fully how ERIs are adapting in this complex and fiscally restrictive environment, it is important to elucidate the general federal economic conditions in the past decade that have contributed to a decline in higher education spending.

The National Economy Since 2000

Leading up to the 2000 presidential election, candidates Republican George W. Bush and Democrat Albert Gore both promised tax cuts as part of their campaign platforms in light of a $236 billion surplus at the end of fiscal year 2000, and projections of a $5 trillion surplus by 2010 (Gosling & Eisner, 2013). While Gore’s plan called for $480 billion in tax cuts, Bush envisioned cuts of $1.32 trillion. After Bush was elected, Congress passed legislation in June 2001 that cut taxes by $1.35 trillion through the end of 2010. Despite predictions of steady federal surplus growth expected to fund these proposed tax cuts, the federal surplus fell to $127 billion by the end of FY 2001. Between 2002 and 2006, “a mild recession, wars in Afghanistan and Iraq, continued marked increases in publicly financed health care . . . and more tax cuts conspired to create budget deficits” (Gosling & Eisner, 2013, p. 54).

In response to slow employment growth following the mild recession, President Bush pushed for further tax cuts, increased standard income tax deduction rates, and
lowered dividends and capital gain tax rates. When Congress approved these changes in May 2003 (officially known as The 2003 Jobs and Growth Tax Relief Reconciliation Act), it created an additional $350 billion in lost revenue through 2010. By 2006, the federal budget had a deficit of $500 billion, and increased defense spending helped to raise federal outlays to more than 20% of gross domestic product (GDP) (Gosling & Eisner, 2013).

Beginning in 2007, the collapse of the real estate market catalyzed the Great Recession. This recession was marked by high unemployment rates, a 4.1% reduction in the GDP, a 23.4% decline in investment rates, and a nearly 40% reduction in the median net worth of American families between 2007 and 2010 (Gosling & Eisner, 2013). In response, President Barack Obama constructed what would become the American Recovery and Reinvestment Act (ARRA) when Congress passed it in February 2009 (Zandi, 2013). A $700 billion package, ARRA combined temporary tax cuts with increased government spending to help stimulate the flailing economy. Specifically, ARRA provided tax incentives for companies and individuals, as well as funding for infrastructure, education, healthcare, low-income workers, housing, state governments, and scientific research.

Even though the Great Recession officially ended in June 2009 according to the National Bureau of Economic Research, the effects on the national economy still linger. A struggling job market and weakened stock portfolios have made consumer confidence extremely fragile and brought pointed attention to the widening gap between the richest Americans and the rest of the country (Zandi, 2013). Despite President Obama’s continuation of a tax cutting stimulus strategy similar to that enacted by his predecessor,
many economists argue that tax cuts are effective “only to the extent the extra disposable income is spent” (Burman & Slemrod, 2013, p. 136). Evidence suggests tax savings from ARRA were being saved or used to pay down debt, limiting their usefulness in stimulating the economy. At the same time, many infrastructure projects such as road and bridge construction slated to be funded by ARRA were criticized for construction delays, and other projects were scrutinized for their utility, such as “an airport renovation in thinly populated rural Pennsylvania or funding for aquatic farming in Minnesota” (Zandi, 2013, p. 108).

**Effects of the Great Recession on States**

The effects of the Great Recession on states in aggregate were significant, given the requirement that all states (except for Vermont) must produce a balanced budget (CBPP, 2013). In fiscal year 2012, states on average had budget shortfalls of 15.5% (Oliff, Mai, & Palacios, 2012). As unemployment skyrocketed and access to credit diminished, states’ budgets plummeted from the loss of income and sales taxes. Additionally, state spending increased as more and more individuals became both eligible for and participated in social assistance programs (Campbell & Sances, 2013).

To balance their budgets, states cut spending, raised taxes, raided reserve funds, and utilized temporary ARRA funding. In total, 46 states reduced health care, elderly and disabled services as well as K-12 education and higher education services in an attempt to balance their budgets (Johnson, Oliff, & Williams, 2011). Many of the spending cuts translated into workforce reductions, with states and local governments eliminating 641,000 jobs between 2008 and 2012. While the private sector experienced more severe job cuts, state job losses “persisted longer, with state and local governments continuing to
eliminate positions even in 2010 and 2011, after private sector job numbers had begun to recover” (p. 256). While states are slowly recovering from the effects of the Great Recession, restoration of funding would not occur until fiscal year 2019, presuming growth in state tax collection continues at the fiscal year 2011 rate of 8.3%. States, however, have not achieved such sustained growth since the 1960s (Oliff et al., 2012).

Furthermore, slow economic growth and increasing demand for social services portend long-term challenges. State estimates, “although incomplete, are consistent with this outlook” (Oliff et al., 2012, p. 4). In short, the Great Recession caused “the greatest decline in state tax revenues on record” (CPBB, 2013, p. 1). While this was a devastating blow to state economies, preexisting fiscal conditions magnified its effect on states (Campbell & Sances, 2013). While a cursory look at state revenues from all sources (which did grow consistently leading up to the recession) could give the semblance of a thriving economy, a deeper look at expenditure increases, revenue mix, and volatility reveals “looming inadequacies . . . that the economic downturn would expose in painful ways” (p. 254).

**State Economies Since 2000**

While state tax revenues historically rise in healthy economies and fall in poor ones, the extent of this effect intensified after 2000 for a variety of reasons. Personal income tax revenue as a percentage of all tax revenue increased from 24% in 1975 to 34% in 2009 (Campbell & Sances, 2013). While salaries and wages remained stable over this time period, investment income experienced substantial fluctuations due in part to major stock market drops in 2001 and 2008, leaving states more vulnerable to severe losses (McGranahan & Mattoo, 2012). An additional source of revenue volatility is
states’ increasing trend to add tax breaks to the existing code, such as exempting more categories of basic goods from incurring sales tax, thus reducing the tax base (Campbell & Sances, 2013). This placed an increased burden on the sale of large and expensive items such as homes and new automobiles—purchases that tend to decline in poor economic conditions—to generate tax revenue.

As states experienced an average of 6% revenue growth annually since the 1970s, expenditures concurrently grew in a variety of areas, such as public safety, infrastructure, education and health care. Spending for mandatory costs—mainly health care and social welfare—have increased sharply since 2000, becoming fixed and unavoidable expenditures. The increased volatility of the tax structure and a less diverse tax base combined with climbing mandatory costs put most states in an incredibly vulnerable position by the time the Great Recession began (Barr & Turner, 2013; Campbell & Sances, 2013).

**Kentucky’s Economy Since 2000**

The Commonwealth of Kentucky was not immune to the aforementioned issues facing state governments in aggregate, and began the new millennium with a $713 million biennial budget shortfall (Childress, 2002). Spending as a percentage of total personal income increased from 18 percent in the late 1970s to more than 22% by 1999, with the majority of spending increases going toward Medicaid expenditures and other social insurance costs. At the same time, attention began to turn toward Kentucky’s tax system, with critics advocating for modernization. A 2001 report on tax policy commissioned by the Kentucky Long-Term Policy Research Center concluded:

> Over the years, a number of incremental changes and special tax code exemptions have reduced compliance with long-standing, ‘good’ tax principles, degraded the
efficiency of the system, and reduced the elasticity of several taxes, especially the sales tax. Other economic changes such as the growth of remote sales and other structural economic changes have further exacerbated the ability of the state’s revenue to grow in proportion to the expansion of Kentucky’s economy—a reasonable expectation if Kentucky state and local governments are to provide the educational and other services demanded by Kentucky’s citizens. (Wildasin, Childress, Hackbart, Lynch, & Martie, 2001, p. xvi)

The authors argued Kentucky’s existing system was neither adequate to meet the state’s increased spending nor equitable across tax brackets. Further, Wildasin et al. (2001) contend that the state’s failure to modernize its sales tax structure in light of a growing service sector and rising online sales is contributing to lost revenue.

Despite extensive changes to Kentucky’s tax code in 2005, the Commonwealth continues to experience budgetary deficits due in part to “the absence of fundamental revenue modernization” (Childress, 2010, p. 2). In 2000-2002, the Commonwealth reported having 235 tax expenditures, a term that encompasses tax exemptions, deductions, credits, exclusions, and other preferential provisions leading to a loss of tax revenue (Bailey, 2011). Between 2010-2012, Kentucky reported 287 tax expenditures. In 2010 alone, the estimated the value of all tax expenditures stood at $8.4 billion, a figure that exceeds the amount of revenue collected in the same year. Moreover, tax expenditures are “estimated to grow 11 percent over the biennium, while General Fund revenue is expected to grow only 7 percent” (p. 2).

**Higher Education Funding in Kentucky**

Nationally, state appropriations to public IHEs fell 17% between 2007 and 2012 (Barr & Turner, 2013). Additionally, because enrollment grew at public institutions during this time frame, the decline in appropriations amounted to a 26% reduction in per student spending, falling from $9,000 to $6,651. In the Commonwealth of Kentucky,
however, appropriations to higher education have been on the decline since the late 1990s, and are projected to experience a 27% decline between 2008 and 2016, adjusting for inflation (Kentucky Center for Economic Policy [KCEP], 2014). The state biennial budget for 2014-2016 has cut higher education funding by an additional 1.5%. As state appropriations and tuition are the two main revenue sources for IHEs, the result of these budget reductions has been a shifting of higher education costs from the state to the students (Bailey & Konty, 2011).

Since 1998, Kentucky’s public colleges and universities have on average tripled tuition costs in an attempt to help offset lost appropriation dollars (KCEP, 2014). The Kentucky Council on Postsecondary Education allowed institutions of higher education to raise tuition by as much as 8% in the 2014-2016 biennium (Kenning, 2014). If current trends in the state continue, projections indicate that tuition, which accounted for 34% of the total share in 2000, will account for 75% of total public higher education funds by 2020 (Spalding, 2014). In addition, funding for state financial aid programs have remained flat, placing additional burdens on students and their families who rely on such assistance for tuition remission (Hoyt, Fox, Childress, & Saunoris, 2012). The steady decline in state funding has led Kentucky IHEs to cut costs and seek alternative sources of revenue. The University of Louisville, for example, redoubled its philanthropic fundraising efforts (Kenning, 2014). Even the University of Kentucky—the state’s largest university—faced challenges, laying off 140 employees in 2012 due to state allocation reductions (Blackford, 2012). For Kentucky’s ERIs with lower enrollment numbers and fewer resources, the budget cuts have proven to be even more daunting, leading these institutions to employ numerous strategies focused on service and personnel reduction.
Kentucky ERI Response to Declining State Appropriations

Reviewing how Kentucky ERIs have responded to these fiscal challenges reveals a variety of strategies. Of these, the pursuit of research and sponsored program funding is the most promising because it focuses on growth versus reductions. Even this approach has its challenges, however, as increasing competition for federal funds requires institutions to be properly prepared and positioned to apply for and manage research and sponsored program funding. Over the past several years, Kentucky’s six state-supported ERIs, in addition to aforementioned tuition hikes, have engaged in several activities in an effort to reduce costs in the face of significant budget shortfalls. Between 2007 and 2009, one institution engaged in an academic audit, guided by principles detailed in Robert Dickeson’s Prioritizing Academic Programs and Services: Reallocating Resources to Achieve Strategic Balance. The audit resulted in the elimination of 17 programs and the reorganization of numerous units and programs within each college.

In 2013, two Kentucky ERIs implemented voluntary buyout programs to assist in addressing budgetary constraints due to state appropriation reversions and potential budget reductions in the forthcoming fiscal years. These programs were designed to encourage eligible employees to separate from the university in exchange for a lump sum payment equal to 50% of one’s annual salary as well as a $1,500 supplement for health insurance costs. While some critical rehires were required, the programs were intended to save each institution several million dollars each. Other ERIs have completed or are engaged in additional reorganizational efforts in an attempt to capture savings, and have curtailed faculty and staff raises, frozen hiring, laid off employees or are considering layoffs as cost-saving measures (KCEP, 2014). Additional strategies include deferring
serious maintenance issues and utilizing more adjunct faculty and instructors in lieu of hiring tenure-track faculty.

The negative consequences of these actions have been poor morale and dissatisfaction among employees. Recent campus-wide surveys at two Kentucky ERIs revealed the majority of both faculty and staff felt dissatisfied with their jobs, had generally low morale, and were concerned about their institution’s direction. These results are consistent with studies on morale and job satisfaction that correlate a lack of salary increases and opportunities for advancement with low morale (AbdulCader, A. & Anthony, P.J., 2015; Gardner, S.; Blackstone, A.; McCoy, S.K. & Veliz, D., 2014; Herzberg, 1966; Kerlin & Dunlap, 1993; Treuter, 1993). Further, low morale has negative effects on employee productivity and is associated with high turnover rates (Pendino, 2012).

The budget shortfalls are also affecting Kentucky ERIs in other ways. One institution has lost federal grant money due to higher education appropriation reductions (Lee & Keys, 2013). Certain U.S. Department of Agriculture awards require a one-to-one funding match from the state. Between 2010 and 2012, the state was unable to meet this match fully on two agriculture research funding programs. While the institution was able to request a waiver and still receive its share of federal funding, the lost matching dollars totaled more than $5.2 million, adversely affecting “research and extension services that benefit rural farmers and communities” (Lee & Keys, 2013, p. 10).

**The Utility of Sponsored Research**

Another response from Kentucky ERIs during this era of declining state support has been an increased emphasis on procuring sponsored programs funding. This strategy,
while not a significant unrestricted revenue generator, is one that focuses on institutional growth rather than cutbacks. External funding for research is not a direct replacement for lost state appropriation funds. Grants and contracts to institutions, regardless of the source, are typically initiated in response to requests for proposals (RFPs) that outline a specific scope of work and deliverables. As such, these funds are intended for specific line items rather than the general budget; consequently, further explanation of their utility is warranted.

In a practical sense, funding for research and other projects can relieve the pressure of declining state support by paying for partial or full salary remuneration, specialized equipment, supplies, and student labor, in addition to indirect cost reimbursement, which covers overhead costs related to conducting research and sponsored projects. As research funding and graduate education have become inexorably intertwined, building research infrastructure also serves as a recruiting tool for graduate programs (Gumport, 2011). Recent budget cuts, appropriation reductions, and other fiscal pressures have created an institutional culture conducive to research, particularly on smaller campuses, as administrative leaders encourage participation in extramural research (Edwards, 2010).

In addition to the funding that sponsored research can bring, it also serves as a measure of institutional status in a variety of ways. Specific departments and programs within one institution are compared to similar departments and programs at other institutions, with the prestige of one particular department extending to the entire university, creating a “halo effect” (Brewer et al., p. 69, 2009). One important indicator of perceived institutional prestige is the amount of federal funding a university receives.
Exacerbating this unit of measurement was the Carnegie Foundation’s classification system for IHEs that, prior to 2005, ranked universities according to the level of federal research funding it received, labeling the highest recipients as Research I universities, with those below as Research II universities. This system, while created to resist homogeny, actually had the opposite effect, as institutions tried to move into the Research I category, due to this title being viewed as the most prominent (McCormick & Zhao, 2005). Despite the fact that the current iteration of the classification system has removed this method of ranking, many institutions continue to reference the old rankings, particularly when referring to their own programs, implying that the system continues to act as a measurement of institutional prestige (Brewer et al., 2009; McCormick & Zhao, 2005).

Achieving a measure of institutional status in this way can translate into revenue generation. In a study of the economic effect of federal research funding on universities’ overall research expenditures, Blume-Kohout, Kumar, and Sood (2008) found that for every dollar in federal funding received, non-research intensive institutions received a 94 cent boost in non-federal funding, compared to a 35 cent increase at research intensive universities. The authors attributed the disparity to an amplified signaling effect whereby the public perceives the institution as having “passed rigorous screening to obtain federal funding” (p. 4). Regardless of the motivations or incentives, many Kentucky ERIs have made dedicated strides toward improving their institutional research infrastructure in several ways. Despite sufficient data to report a direct causal relationship between declining state appropriations and an increase in externally funded research activity at Kentucky ERIs, there is a correlation between the two.
Kentucky ERI Research Growth

According to the 2012 NSF HERD survey, federally financed research expenditures at Kentucky ERIs collectively grew by more than 300% between FY 2003-2012. Figure 2.1 below, which excludes one land grant institution due to its ability to obtain federal funding not available to the rest of the population, summarizes these annual increases. The names of each institution have been replaced by pseudonyms in order to maintain anonymity.

Figure 2.1. Federal R&D expenditures to Kentucky ERIs, FY 2003-2012. Adapted from “Federally financed higher education R&D expenditures, ranked by FY 2012 R&D expenditures: FYs 2003-12,” National Science Foundation, National Center for Science and Engineering Statistics, 2012.

Looking more closely at expenditures by research category during this period reveals growth in specific areas (NSF, 2013a). For example, several institutions experienced an increase in life sciences and psychology funding, largely due to participation in the
Kentucky Biomedical Research Infrastructure Network (KBRIN), a project funded by the National Institutes of Health (NIH) and led by the University of Louisville aimed at increasing the capacity for biomedical research at Kentucky ERIs (University of Louisville, n.d.). Initiated in 2001, KBRIN has helped Kentucky ERIs successfully receive NIH funding for a variety of life science research and infrastructure endeavors.

Social sciences funding also increased considerably at most institutions and can be attributed to a variety of events. Mountainside University established an educational unit in 2007 focused on professional development and teacher effectiveness in K-12 classrooms through technology and data-informed promising practices. Established with the expectation of pursuing external funding, this unit has been successful in obtaining a variety of federally sourced grants for improving teacher quality in the state. Two Kentucky ERIs have social science-based Programs of Distinction, a provision added to the Kentucky Postsecondary Education Improvement Act of 1997 that tasked Kentucky ERIs with establishing an applied research program and provided $6 million total per biennium in funding (Applegate, Noxel, & Payne, 2007). Both programs dedicatedly seek external funding for research projects. One institution’s program of distinction is housed in its College of Science, Engineering and Technology. Between 2003 and 2012, external research expenditures for this area rose from zero to more than $1 million (NSF, 2013).

The establishment of ERI programs of distinction is consistent with the trend for universities across the country to increase external funding capacity through organized research units (Gumport, 2011). At the same time, it should also be noted that Kentucky ERIs all benefitted from a significant increase in federal earmarks for research purposes until a moratorium halted the allocations in 2010 (Brainard & Hermes, 2008; Leven,
These non-competitive research dollars also helped to increase these institutions’ federally financed funding during this timeframe.

Other institutional changes within Kentucky ERIs indicate the intentional expansion of research administration infrastructures. Two Kentucky ERIs have established research foundations to serve as conduits for its external funding. Channeling sponsored funding through a research foundation allows an institution to accept certain contractual language that universities cannot, giving the foundation more flexibility particularly when working with industry contracts. In addition, research foundations are eligible for opportunities open only to 501(c)(3) organizations, providing a new avenue for potential funding. In 2006, one institution restructured its Office of Grants and Contracts, renaming it the Office of Research and Sponsored Programs, and upgrading the office director position to an associate provost for research. The change was undertaken to remain consistent with the administrative structure at other comprehensive universities, and reflected an institutional commitment to enhancing the University’s research infrastructure. During this time, the new associate provost modified the office’s organizational structure to add an additional grant administrator and administrative assistant, and assumed the responsibilities for the undergraduate research program.

These changes serve as evidence of Kentucky ERIs working to position their institutions strategically as research-oriented universities and become more competitive in securing external funds. However, as institutions are reliant upon external sources for the vast majority of its research funding, it is prudent to examine the research and development funding landscape, as changes in this landscape portend changes in institutions with respect to research.
Sponsored Research Funding Trends

The federal government has been and continues to be the predominant funder of university research; however, adjusting for inflation, federal research expenditures to IHEs actually fell slightly in 2012 for the first time since 1974 (Haney, 2014; Britt, 2013). While federal research funding as a percentage of the federal budget consistently grew each year following World War II, it had remained relatively flat since the 1970s, with spending shifting to direct Social Security, Medicaid and Medicare payments to citizens (Haney, 2014). The economy has grown considerably since the 1970s; nonetheless:

That economic growth has not translated into corresponding growth in the federal budget because tax rates on individuals are mostly flat and tax rates on corporations have greatly declined since the golden age of federal funding for research in the 1950s and 1960s. (p. 51)

Specifically, corporate income taxes as a percent of federal revenue dropped from 40% in 1944 to approximately 15% in 2004, and fell to 11% in 2014. In turn, industry sponsored research began to grow in the late 1970s and early 1980s. By 2009, “around two-thirds of research and development in scientific and technical fields was funded not by the government, but by businesses” (p. 52). Despite this, industry’s contribution to university research has not grown significantly since the 1990s.

While non-profit and business spending on higher education research showed modest increases in 2012, state and local government funded expenditures “showed a modest decline for the second year in a row” (Britt, 2013, p. 2). The largest growth in non-federal research expenditures has fallen upon IHEs themselves, increasing by more than $1 billion in fiscal year 2012. The NSF HERD survey measures institutionally financed research by collecting data on institutional cost share and unrecovered indirect
costs on sponsored projects as well as actual financed research. Increasing self-financed research, while feasible for larger, research-intensive universities, is often not a viable option for ERIs.

The current fiscal realities of federal research expenditures to institutions of higher education combined with an increased competition for funding have created the need for efficiency, ingenuity and capacity building in the ERI research enterprise. Institutions that can find ways to adapt, build upon existing strengths and cultivate a culture of research excellence as an integral component of academic life will position themselves for success in an ever-increasing field of contenders. The growth in sponsored research at Kentucky ERIs is largely due to dedicated changes both within sponsored program offices as well as other institutional units.

**Theoretical Framework**

Analyzing organizations as systems and subsystems working in concert with their environments falls under the umbrella of *systems theory* and has influenced numerous areas of study, such as biology, sociology, communications, economics, and education (Scott, 1981). While its definition is rather nebulous, systems theory generally refers to “a broad conceptual framework that permits the identification of key inputs, outputs, and transformative processes in organizations . . . [facilitating] the understanding and classification of the more basic forces at work” (Bess & Dee, 2008, p. 91). Moreover, because the rationale for its inception involves promoting clarity of purpose and encouraging collaboration in the face of increasing scientific complexity and compartmentalization, systems theory is particularly useful in helping to understand complex organizations (Banathy & Jenlink, 2004; Bess & Dee, 2008).
Systems theory, while limited in its ability to allow researchers to make precise predictions, has utility in providing an all-encompassing picture of an organization and its various components and revealing answers to why specific occurrences take place. Moreover, understanding the environment outside of the organization can give insight to organizational and individual behavior that may otherwise appear anomalous. While systems theory has its origins in the natural sciences, it was soon adapted for use in the social sciences; as such, there are “two theoretical traditions” (Bess & Dee, 2008, p. 91) that merit further discussion. These two strands are general systems theory and social systems theory.

**General Systems Theory**

The creation of general systems theory is attributed to biologist Ludwig von Bertalanffy (1968) who recognized that the increasing specialization, the large amounts of data, and the increasing complexity of theoretical and technical structures in various scientific disciplines had “encapsulated [scientists] in their private universes” (p. 30). At the same time, Bertalanffy noticed how scholars from these discrete disciplines were attempting to resolve problems by not only isolating parts of the whole, but also by analyzing the interactions between parts, as well as their organization and order. Regardless of the unit of analysis—whether it was a single cell within an organism or a complex organization—studies in bacterial cells, plants, animals, and even economic principles were all concerned with systems, or “complexes of elements standing in interaction” (p. 33) irrespective of the differing mechanisms involved, resulting in a theoretical isomorphism across fields. From this, Bertalanffy concluded:

Thus, there exist models, principles, and laws that apply to generalized systems or their subclasses, irrespective of their particular kind, the nature of their
component elements, and the relations or ‘forces’ between them. It seems legitimate to ask for a theory, not of systems of a more or less special kind, but of universal principles applying to systems in general. (p. 32)

General systems theory, thus, is an attempt to further the movement toward interdisciplinary scientific integration. A variety of individual sciences are concerned with the interconnectedness of units in a particular system and their relationship with its environment, as changes within or outside of the system have implications for its other components. As previously mentioned, a closed system is one that does not interact with its environment. Conventional physics and thermodynamics, for example, deal with closed systems (Bertalanffy, 1968).

In the case of organizations, thinking of the concepts of open and closed systems on a continuum, one can presume no organization is entirely closed or open, but may operate at varying levels of either end (Chance & Björk, 2006). In this sense, organizations have both perimeter boundaries separating them from the environment as well as internal boundaries separating subunits of the overall system (Bess & Dee, 2008). The permeability of these boundaries—that is, the more open or closed they are—has implications for “the system’s vitality and energy consumption” (p. 96). Overbounded systems deflect environmental stimuli, and underbounded systems fail to regulate environmental influence. In each instance, the system suffers. Organizations must achieve an optimum balance between being open and closed in order to maximize vitality. Nonetheless, the main assumption undergirding systems theory is the acknowledgement of open systems “which maintain themselves through [varying degrees of] constant commerce with their environment” (Katz & Kahn, 1966, p. 260). Additional assumptions of general systems theory will be discussed in the following sections.
Inputs

Just as cells need oxygen to thrive, and humans need food and water to live, organizations require energies, or inputs, to survive. Environmental inputs to organizations can be kinetic or potential, meaning they either use it to serve an immediate need or change, or they can store this energy for use at a later time (Bess & Dee, 2008; Hoy & Miskel, 2007; Katz & Kahn, 1966). For organizations, these inputs can be further subcategorized as either maintenance or signal. Maintenance inputs “provide the system with the capacity to perform the requisite tasks to transform raw material into more complex forms suitable for output” (Bess & Dee, 2008, p. 98) and include things such as funding, materials, equipment, and personnel. Signal inputs are informational in nature and aid in organizational decision making both internally and externally.

Depending on the nature of the organization, signal inputs can take a variety of forms. In a university, for example, signal inputs include data from peer institutions about particular programs or processes, demographic changes in schools serving as recruiting grounds, and even published research results that have a bearing on didactic or research methods (Bess & Dee, 2008). At times, an organization may receive an input but not be ready or equipped to process it. In this case, the organization must store the information or raw materials and recall them at the proper time, or face potential consequences if the inputs are ignored or forgotten.

Transformation

Despite the form inputs take, a transformation of these various inputs must occur to produce a product. In the human body, food consumed is transformed into energy through several processes. For organizations to transform inputs, they employ any
number of processes depending on the situation; a college will admit students and, through both curricular and ancillary activities, transform them into educated citizens prepared for the workforce (Bess & Dee, 2008). Regardless of the process, the transformation “includes the internal operation of the organization and its system of operational management” (Lunenburg & Ornstein, 2008, p. 32). More succinctly, “some work gets done in the system” (Katz & Kahn, 1966, p. 261).

**Outputs**

The result of the transformation process is a corresponding output, or product of the organization. In general terms, outputs typically come in the form of products or services, such as a factory producing a consumable good, or a university producing an educated graduate. As these outputs are exported into the environment, their perceived adequacy can often serve as a measure of organizational effectiveness (Bess & Dee, 2008). For example, an IHE that fulfills societal expectations in producing well-educated and productive citizens may be considered a successful organization among stakeholders in the environment. It should also be noted organizations can produce internal outputs. Services provided by a variety of subunits are often exclusively directed to internal customers, and their adequacy (or lack thereof) can have ramifications for organizational effectiveness. Faculty and staff unhappy with human resource policy changes at a university, for example, may exhibit low morale, which in turn may lead to poor work performance.

**Feedback**

While inputs provide the means through which an organization creates outputs, they can also provide information useful “about its own functioning in relation to the
environment” (Katz & Kahn, 1966, p. 262). This information is feedback an organization can use to modify behavior and enact changes required to maintain vitality. By nature, feedback is typically negative, allowing the organization to make operational and procedural corrections. Organizations that fail to react to negative feedback face the prospect of extinction; however, thoughtful selection is imperative, as an organization cannot react to every piece of information inputted into the system.

As previously mentioned, underbounded systems that do not regulate environmental feedback may over expend resources and face failure. Katz and Kahn (1966) suggest organizations may engage in a coding process to distill feedback into “a few meaningful and simplified categories for a given system” (p. 262). Choo (2006) further explicates the system feedback process though the concept of a knowing organization. A knowing organization is one that can process pertinent information from the environment to make sense of what it means, use the information to generate both personal and formal knowledge, and in turn use the knowledge created to make organizational decisions. The term knowing deliberately conveys exclusivity, intentionality, and the idea that this “knowledge is the result of collective action and reflection” (p. 1).

Differentiation

As organizations thrive and grow, they inevitably “tend to become more diversified and internally elaborated, with the components taking on more differentiated, specialized functions” (Bess & Dee, 2008, p. 101). The differentiation of organizations, while inherently desirable as it indicates growth, can become problematic when subunits of the larger system multiply, diversify, and separate, thus increasing the likelihood of
disconnection to the organization and its goals. When disconnect exists, subunits may not be able to work together to accomplish organizational goals. Additionally, these subunits may begin to pursue their own objectives rather than those of the overall system. Coupling subunits too closely, however, “may hamper the ability of individual units to respond quickly to local conditions” (p. 102). As with the concept of open and closed systems, organizations that can achieve an optimal balance will maximize their vitality.

**Entropy**

If organizations become too large and differentiated, entropy, or a process by which “all forms of organization move toward disorganization or death” (Katz & Kahn, 1966, p. 262), can occur. If disconnectedness from differentiation is not remedied, subunits of the system will essentially enter into chaos characterized by indistinct roles and responsibilities, duplication of efforts, and wasted energy (Bess & Dee, 2008). To counteract this effect, organizations need to acquire negative entropy:

The open system, however, by importing more energy from its environment than it expends, can store energy and can acquire negative entropy. There is then a general trend in an open system to maximize its ratio of imported to expended energy, to survive and even during periods of crisis to live on borrowed time. Social organizations will seek to improve their survival position and to acquire in their reserves a comfortable margin of operation. (Katz & Kahn, 1966, p. 262)

This process can manifest itself in a variety of ways. Feedback can lead an organization to restructure its subunits, creating efficiency and maximizing inputs (Bess & Dee, 2008). Or, an organization can grow its discretionary fund for use in fiscal crises. In organisms, the potential to acquire negative entropy is finite and cannot be maintained; organizations, however, can sustain themselves indefinitely through the negative entropy acquisition process. Despite this, “the number of organizations which go out of existence every year is large” (Katz & Kahn, 1966, p. 262).
Homeostasis

The regulation of temperature in the human body is a process designed to maintain a consistent temperature sufficient for the body to operate, regardless of external conditions (Katz & Kahn, 1966). Similarly, the processes by which systems receive inputs, transform them into outputs, and use feedback to take corrective actions are designed to achieve equilibrium, or a state of balance. Despite the connotation, system equilibrium is not static, because while the intent is to maintain the system’s character, this is achieved by “a continuous inflow of energy from the external environment and a continuous export of the products of the system” (p. 263). Thus, open systems aim for a state of homeostasis involving “continuous internal adjustments to remain in balance or harmony with the environment” (Bess & Dee, 2008, p. 104).

Noting the concept of true homeostasis in systems is misleading, Buckley (1968) delineated two distinct processes through which organizations maintain stability. Morphostasis refers to organizational processes that preserve a system in its current form; morphogenesis, however, refers to processes “that elaborate or change the system, for example, growth, learning, and differentiation” (p. 110). Consequently, realizing homeostasis in organizations is a dynamic process where maintaining system stability involves change and growth (Hoy & Miskel, 2007). Corporations will often acquire its competitors in order to stay relevant and maintain market share; they may also purchase its own suppliers to enhance its internal supply chain (Panzarino, 2013). Universities continually establish new academic programs in emerging fields to keep current with environmental expectations. In this way, organizations tend to move toward homeostasis by “preserving the character of the system through growth and expansion” (Katz & Kahn,
1966, p. 264). So, as the environment changes, organizations will strive for homeostasis by making internal changes, which also often require organizational growth. It is also important to note while organizations in a system depend on environmental feedback to indicate areas of potential change and growth, the environment is similarly a consumer of organizational outputs. For example, employers rely on universities to produce knowledgeable and capable individuals ready for the workforce. In this way, “institutions and environments are reciprocally interdependent” (Bess & Dee, 2008, p. 130).

Equifinality

The concept of equifinality refers to the idea that systems can “reach the same end from different initial positions and through different paths” (Hoy & Miskel, 2007, p. 22). Simply put, like organizations can achieve homeostasis and operate effectively through a variety of different structures and processes. Colleges and universities, for example, can operate differently and nevertheless produce educated graduates. While some similarities may exist with respect to particular processes influenced heavily by the environment, such as curriculum models based on accrediting body standards, the concept of equifinality suggests that similar organizations can craft institution-specific strategies for success (Bess & Dee, 2008). Katz and Kahn (1966) note, however, “as open systems move toward regulatory mechanisms to control their operations, the amount of equifinality may be reduced” (p. 265).

General Systems Theory Utility

General systems theory provides a useful and straightforward framework through which researchers can elucidate and analyze relationships between an organization and its environment, as well as connections between the organization and its various subunits.
(Bess & Dee, 2008). This broad view of organizations directs attention toward the nature of various relationships and their contribution to system stability and vitality. While general systems theory is a diagnostic tool for understanding organizational phenomena, shortcomings in its utility lay in limitations with respect to “understanding, predicting, and influencing individual behavior in specific settings” (p. 92). As organizations are staffed and run by people, researchers should be mindful of how individuals within organizations behave in response to both internal factors as well as their environment. In an attempt to answer these questions, scholars have constructed a social systems theory containing a “set of concepts that [fit] within general systems theory and can be useful in understanding how human beings as bounded systems interact with their environments” (p. 109-110).

**Social Systems Theory**

Building upon the ideas of general systems theory, social systems theory is concerned with the interrelationships of a system and its subsystems; however, the individual—not the organization—is the main system of interest (Bess & Dee, 2008). Just as general systems theory attempts to explain the interactive relationships of systems and the environment, social systems theory examines the individual’s relationship both with the environment and internal subsystems, and how these interactions explain individual behavior. Conceptually, any organization can be considered a social system, regardless of its size or complexity, as they all share the common purpose of carrying out specific functions in routine patterns (Getzels & Guba, 1957). A further analysis of the organizational and individual dimensions of social systems theory sheds light on the
dynamic nature of interactions between the two, and how this framework helps researchers understand individual behavior in organizations.

The *nomothetic* or normative dimension in a social system consists of the various external forces constituting an individual’s environment (Getzels & Guba, 1957). The nomothetic dimension is made up of three elements: the *organization* itself, the *roles* played within these institutions, and the *expectations* organizations demand. The organization within a social system is any entity “established to carry out . . . institutionalized functions for the social system as a whole” (p. 425). They exist to achieve specific goals and require people to do the work necessary to attain those goals. The term *organization* implies a formalized bureaucracy that specifies structure, rules, and the interrelation of parts within a given social system (Hoy & Miskel, 2007). Because achieving organizational goals within a formal structure requires the existence of specific roles, organizations are essentially normative in that “role expectations are obligatory upon the actor if he is to retain his legitimate place in the institution” (Getzels & Guba, 1957, p. 426). As such, the role serves as the most critical subunit of a social system (Parsons & Shils, 1951).

Parsons and Shils (1951) define the role in the context of a social system as “that organized sector of an actor’s orientation which constitutes and defines his participation in an interactive process” (p. 23). Roles represent a position, office, job title, or other status within an organization, and vary in specificity from quite vague to very detailed (Bess & Dee, 2008; Hoy & Miskel, 2007). Regardless of this variation, roles are defined by certain expectations, and these expectations in turn define the normative behavior for a given role. For example, university faculty are expected to teach effectively and conduct
research, and students are expected to participate in class and excel in their studies. Hoy and Miskel (2007) refer to these roles and expectations “the official blueprints for action, the organizational givens of the office” (p. 25). Another important characteristic of roles in a social system is how their interrelated relationships contribute to role meaning (Getzels & Guba, 1957). More specifically, any given role exists in relation to one or more related roles. The role of a teacher would not make sense without the existence of a student, and the role of a student would not make sense without the existence of a teacher. In this way, roles are partially defined by other related roles.

Sociologist Erving Goffman (1959) further explicated the concept of multiple sources contributing to role meaning through analyzing social interactions in terms of theatrical performances, drawing parallels between real life and the performance of a play. Goffman noted how a director, other actors, and audience members all influence the performance of any particular actor, or individual, much like subordinates, colleagues, and external factors affect an individual’s organizational role. Moreover, this useful analogy also reveals how actors themselves influence the roles they play. Just as actors “interpret his or her role, and this interpretation depends to some extent on what the individual brings to the role,” (Owens, 2004, p. 125), individuals in organizations similarly are influenced by their own personal characteristics.

The *idiographic*, or individualistic, dimension in a social system consists of internal components that influence an individual’s behavior in a social system and helps explain how the disposition of individuals who fill roles in an organization works in concert with nomothetic dimensions to explain organizational behavior (Getzels & Guba, 1957). Much like the organization is composed of specific and interrelated subunits and
roles, the *personality* is the product of “various psychological systems within an individual that determine his or her unique adjustments to his or her external environment” (Bess & Dee, 2008, p. 113). The personality itself is comprised of various *need-dispositions*. Conceived by Parsons and Shils (1951), need-dispositions refer to tendencies in individuals to behave in a consistent fashion across various situations. Certain individuals display introverted or extroverted behavior regardless of the situation, for example. To this end, introverted and extroverted individuals who occupy the same organizational role would most likely behave differently in those roles. The combination of individualistic need-dispositions and normative role expectations form the basis of individual motives for specific behaviors within the social systems construct (Getzels & Guba, 1957).

The degree to which nomothetic or idiographic factors dominate space with respect to behavior and decision making in the social system depends on several factors, including the individual’s personality, specific role, and the organization itself. Certain organizations, however, lend themselves to predictable outcomes. In military organizations or private, church-run schools, for example, role expectations would likely dominate individual behavior, while the creative department of a marketing company may let individualistic aspects drive behavior. The influence of role and one’s personality exists to some degree no matter how dominant one dimension is in the decision-making process because it is virtually impossible to eliminate either factor entirely. An individual’s personality will always be present and have some effect on decisions, just as an organization and its roles will always effect decision making. Thus, the optimal balance between the two factors is unique to each organization (Getzels & Guba, 1957).
However, as Bess and Dee (2008) note, “stable organizations encourage the development of established structures and roles, while unsettled organizations require more continuing input from organizational members” (p. 114-116).

**Summary**

General systems theory and social systems theory provide researchers with useful tools for understanding organizations, the people within organizations, and how their interactions with internal subsystems and external environmental factors affect behavior. For complex and multi-faceted organizations such as IHEs, systems theory concepts lay out a methodical process through which organizational leaders can diagnose problems or inefficiencies in system components. In this way, systems theory “helps education leaders view their work as a continual, systematic and relational process, rather than as a single activity” (Chance & Björk, 2006, p. 137).

The ideas detailed in systems theory support the notion that organizations are complex in their structural and social composition, and depend heavily on the external environment for resources and feedback. As a result, organizations must be adaptive in order to survive when environmental changes occur. The change process, then, is not only inevitable, but it is also recurring, meaning institutions that can maximize the capacity for problem solving will be better situated to mitigate the effects of change. As the environment continues to change in numerous ways, it is incumbent upon organizations wishing to survive to embrace these concepts. Many organizations tend to become more rigid in the face of environmental change, but as systems theory concepts reveal, morphogenic organizations that demonstrate learning and growth during unstable times may be able to better adapt.
Conclusion

State-supported IHEs rely heavily upon state-level funding for their operating budgets. The current decline in state allocations is an external environmental occurrence causing significant organizational shifts for ERIs. In order to adapt to these changes, Kentucky ERIs have employed a variety of cost-saving reductions in services and personnel. In addition, they have also begun seeking alternate sources of revenue, including externally funded research and sponsored program dollars. Sponsored research support not only provides project-specific funding, but it also allows ERIs to build a research infrastructure that attracts skilled faculty, talented students, and additional research funding. To better situate themselves for securing and managing federal research funds, Kentucky ERIs have restructured and adapted their research administration offices. As such, an examination of changes in these institutions and their research structures may be explained by systems theory and generate insights that may expand our knowledge of this dynamical relationship and benefit a wider population of ERIs.
CHAPTER 3

METHODOLOGY

This qualitative, exploratory multiple case study investigates the relationship between environmental changes and adaptive responses in selected state-supported Kentucky Emerging Research Institution (ERI) sponsored programs offices (SPOs) aimed at expanding research capacity and federal research funding procurement. Since 2008, higher education funding for state-supported institutions of higher education (IHEs) in Kentucky has been cut by 27% after adjusting for inflation (Kentucky Center for Economic Policy [KCEP], 2014). This decline in resources has caused Kentucky ERIs to both seek cost-saving strategies and pursue alternative revenue streams such as sponsored programs funding. As the institutional unit responsible for facilitating sponsored research, the SPO is a critical organizational subunit that enhances the capacity of universities to secure externally sponsored funding. Two research questions guided this study:

1. In what ways has the decline in state appropriations to selected ERIs in Kentucky influenced the work of their sponsored programs offices?

2. How have changes within sponsored programs offices at selected ERIs in Kentucky affected the procurement of external research funding?

These questions provided an initial framework that guided the development of the study design. During the study, it became evident that the emerging data did not seamlessly align with these questions. Instead, I used a thematic approach grounded in categories that emerged from that data.
Research Design

Qualitative research is a form of inquiry focused on understanding the social interactions constructed by humans (Merriam, 1998) and uncovering how separate pieces may fit together to create a phenomenon. Meaning “is embedded in people’s experiences and . . . this meaning is mediated through the investigator’s own perceptions” (p. 6), indicating that qualitative research aims to understand experiences from the participants’ perspectives. I served as the principal data collection and analysis instrument. Other key characteristics of qualitative methodology are the reliance on extensive fieldwork and its emergent nature, in that “research questions, methods, and other elements of design are altered as studies unfold” (Hatch, 2002, p. 10). Thus, the two main purposes of conducting qualitative research are either to explore and describe phenomena or to explain patterns and describe influential relationships (McMillan & Schumacher, 2010).

Case Study

A case-study approach is often used when researchers are interested in understanding individual or group phenomena (Yin, 2009). This method is relevant to this study because the topic is a bounded “empirical inquiry . . . [and] a contemporary phenomenon within its real-life context” (Yin, 2009, p. 18). The research examined a specific topic (environmental changes and adaptive responses in Kentucky ERI research administration offices) during a specific period of time (July 2003 to October 2015). Additionally, a case study methodology is appropriate when “a ‘how’ or ‘why’ question is being asked . . . over which the investigator has little or no control” (p. 9). Because the study investigates how SPOs are doing work in light of environmental changes, a case-study approach is an appropriate method. Consequently, the research design adhered to
procedures recommended by noted case study scholars including Merriam (1998), Stake (1995), and Yin (2009).

A multiple case approach is generally preferred over a single case for a variety of reasons. Single case designs often face criticism surrounding their “uniqueness or artifactual conditions” (Yin, 2009, p. 61). Multiple-case designs are typically more compelling, adding confidence to findings and providing a deeper understanding of a given phenomenon because the act of comparing groups allows the researcher to maximize or minimize “both the differences and the similarities of data that bear on the categories being studied” (Glaser & Strauss, 1967, p. 55). Because the study involved multiple cases, it is important to establish an iterative and replicative process—much like processes natural scientists use when reproducing laboratory experiments—in order to strengthen the robustness and integrity of the findings (Yin, 2009). Each selected site was treated as an individual case and data collection at each site occurred in a similar manner.

**Selection of Study Sites**

Kentucky has six state-supported IHEs that fall under the Federal Demonstration Partnership’s (FDP) definition (Garcia et al., 2009) of an ERI. It should be noted that Kentucky’s 16 community and technical colleges also fall under the FDP ERI definition. Although community colleges pursue and manage federal grant funding, research is not typically articulated as a distinct goal of these institutions (American Association of Community Colleges [AACC], 2014) and thus they were excluded from the population for this study. From the identified population, I also excluded two additional institutions. Because I am employed as a research administrator in the SPO at a Kentucky ERI, this institution was excluded from eligibility in order to reduce the potential for bias.
addition, the Kentucky ERI land grant institution was also excluded from eligibility because its status entitles it to numerous mechanisms of federal support not available to other Kentucky ERIs.

From the reduced pool of four institutions, I selected the three institutions with the greatest increase in federally funded research expenditures between fiscal year 2003 and 2012 for inclusion in the study. While two of these three institutions had nearly identical increases in such expenditures, one had federal funding totals similar to another institution in a different part of the Commonwealth, and was thus excluded from the study. Another consideration was the geographic diversity of the institutions. I purposefully chose to select institutions that represented three distinct regions of the Commonwealth. A final consideration was diversity in the amount of research funding each institution receives. I purposefully selected institutions that exhibited low, medium, and high amounts of federal financed research expenditures as of fiscal year 2012 when compared to the population. This method of purposeful selection allows me to select cases that best represent the phenomena being studied (Maxwell, 2005).

Additional advantages for examining the three selected institutions exist in their organizational diversity. Each university’s research enterprise is structured differently, with varying job titles and organizational hierarchies while simultaneously exhibiting funding growth. This demonstrates the systems theory concept of *equifinality*, whereby organizations can “reach the same end from different initial positions and through different paths” (Hoy & Miskel, 2007, p. 22).
Study Sites: Three Kentucky ERI Institutions

Each selected institution is a state-supported, four-year university located in different regions of the Commonwealth of Kentucky. Each offers a comprehensive array of graduate degree programs and is characterized by very high undergraduate enrollment (Carnegie Classification of Institutions of Higher Education, 2015). Following is a brief profile of each institution, along with a description of their organizational structure as it pertains to research and sponsored programs. In order to maintain anonymity, the names of each institution have been replaced with pseudonyms.

Appalachian University

Founded in 1906 by the state legislature as a normal school, Appalachian University (AU) primarily serves a 22-county region in an Appalachian area of the Commonwealth. The institution offers more than 160 degree programs, including doctoral degrees in education, educational leadership, nursing practice, and occupational therapy. The ultimate authority for AU’s research enterprise rests with the senior vice president for academics and provost, who oversees the dean of graduate education and research. This dean, in addition to managing a variety of academic-related initiatives, is also responsible for the institution’s division of sponsored programs, which is run by a director and three full-time staff. During fiscal year 2014, AU received more than $45 million in funding for all externally sponsored projects.

Metropolitan University

Established in 1948 as an extension campus of the University of Kentucky, Metropolitan University (MU) became an independently operated four-year college in 1968 and was granted university status in 1976. Located in a metropolitan area of the
Commonwealth, MU serves an eight-county region and offers 71 undergraduate degree programs and 21 graduate degree programs, including doctoral degrees in educational leadership, nursing education, and nurse practice. MU’s research enterprise is situated within academic affairs, with ultimate authority going to the provost and executive vice president. Direct responsibility for research goes to the associate provost for research, graduate studies and regional stewardship, who oversees the office of research, grants and contracts, which is led by a director and five other full-time employees. During fiscal year 2014, the institution received more than $8 million in funding for all externally sponsored projects.

**Industrial University**

Founded in 1906 by the state legislature as a normal school for teacher training, Industrial University (IU) primarily serves a 27-county region in an area of the Commonwealth where numerous manufacturing entities reside. The institution offers more than 80 graduate degree programs, including doctoral degrees in educational leadership, nursing practice, physical therapy, and clinical psychology. With respect to research, IU’s organizational structure was reorganized in January 2015 following the elimination of the institution’s vice president for research position, which was done both as a cost-saving measure in response to declining state support and as a way for academic affairs administration to better engage in research activity. Prior to this change, all units involved in research reported directly to the vice president for research. In comparison to the other study sites, IU’s current organizational structure for research is large and highly differentiated. This organizational structure was again reorganized in August 2015 after the provost stepped down from his position. This new structure creates the new position
of associate provost for research and creative activity, which has direct oversight of an associate vice president for research, the office of sponsored programs and a research compliance officer. The institution’s office of sponsored programs employs six full-time professional staff and one full-time administrative assistant. Additionally, the senior vice president for finance and administration oversees the local branch of the Kentucky Innovation Network, as well as several research, development and business incubators. During fiscal year 2014, IU received more than $20 million in funding for all externally sponsored projects.

Table 3.1 provides information related to each institution’s research enterprise to provide a sense of size and scope. The data included were derived from institutional research and SPO reports published in 2014, with the exception of federal research funding and federal R&D expenditure increases, which were extrapolated from NSF National Center for Science and Engineering Statistics (NCSES) data (NSF, 2012a).
Table 3.1

Site Description

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>AU</th>
<th>MU</th>
<th>IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrollment (FY 2014)</td>
<td>16,305</td>
<td>15,114</td>
<td>20,000</td>
</tr>
<tr>
<td>Total Sponsored Projects Funding (FY 2014)</td>
<td>$45,444,635</td>
<td>$8,148,582</td>
<td>$20,913,079</td>
</tr>
<tr>
<td>Full-time Faculty (FY 2014)</td>
<td>680</td>
<td>550</td>
<td>785</td>
</tr>
<tr>
<td>Federal Funding (All Sources, FY 2014)</td>
<td>$27,353,589</td>
<td>$5,709,243</td>
<td>$14,774,677</td>
</tr>
<tr>
<td>Federally Financed Research Expenditures, FY 2012</td>
<td>$2.3 Million</td>
<td>$1.4 Million</td>
<td>$5.7 Million</td>
</tr>
<tr>
<td>Federal R&amp;D Expenditure % Increase (FY 2003- FY 2012)</td>
<td>784%</td>
<td>582%</td>
<td>176%</td>
</tr>
<tr>
<td>Sponsored Programs Office Size</td>
<td>4</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>Chief Research Officer</td>
<td>Associate VP for Research</td>
<td>Vice Provost</td>
<td>Associate Provost</td>
</tr>
</tbody>
</table>

Research Participants: Sponsored Programs Office Staff

The employees of each ERI’s SPO are the primary source of interview data.

While other institutional units and their staff play a role in the research enterprise, SPOs serve as the primary managers of all external funding submissions. SPOs are the organizational units authorized to review and submit external funding submissions on behalf of their institutions; thus, they are pivotal drivers of externally sponsored research
activity. In this way, research administrators are placed firmly in a mediator-expeditor role among both internal and external stakeholders (Beasley, 2006) and provide a cogent perspective on environmental change and organizational adaptation as it relates to the ERI research enterprise.

Each selected site has a different organizational structure. As a result, each institution’s SPO varies with respect to both the number of staff as well as their titles and roles. Table 3.2 provides additional detail about the SPO staff participating in the study.

Table 3.2

*Supported Programs Office Participants*

<table>
<thead>
<tr>
<th>AU</th>
<th>MU</th>
<th>IU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
<td>Director</td>
<td>Director</td>
</tr>
<tr>
<td>Associate Director</td>
<td>Senior Grants Administrator</td>
<td>Associate Director</td>
</tr>
<tr>
<td>Compliance Coordinator</td>
<td>Senior Grants Administrator</td>
<td>Assistant Director</td>
</tr>
<tr>
<td>Grants Specialist</td>
<td>Senior Grants Administrator</td>
<td>Senior Grants Coordinator</td>
</tr>
<tr>
<td>Compliance Coordinator</td>
<td>Senior Grants Coordinator</td>
<td>Senior Grants Coordinator</td>
</tr>
<tr>
<td>Specialist</td>
<td></td>
<td>Grants Coordinator</td>
</tr>
</tbody>
</table>

Research Participants: Sponsored Program Offices’ Direct Report

In each selected site’s organizational hierarchy for research, a chief research officer (CRO) has oversight of the SPO. These individuals, while typically not directly involved in the day-to-day operations of the office, nonetheless offer a breadth and depth of information regarding institutional culture and support with respect to research. Depending on the nature of their specific roles, these individuals may also be involved
with research development activities and may hold significant influence over the creation and direction of institutional policies governing the research enterprise. Consequently, it was critical to gain the perspectives of these individuals.

**Appalachian University**

Personnel in the division of sponsored programs report directly to the graduate dean and associate VP for research. He has a background in physics and was previously an associate dean for graduate studies at Southern Illinois University at Edwardsville. An active member of the National Council of University Research Administrators (NCURA), he often presents and consults on research development and research policy issues at ERIs.

**Metropolitan University**

Personnel in the office of research, grants and contracts report directly to the vice provost for research, graduate studies and regional stewardship. She is new to the institution as of July 2015 and previously held a similar position at another IHE. Prior to coming to MU, she served as an associate vice president of academic affairs for research, scholarly and creative activity as well as department chair in environmental sciences.

**Industrial University**

IU’s interim associate provost for research and creative activity is a biology professor who has worked at the institution since 1991. An active researcher, the associate provost has long been involved in the National Institutes of Health (NIH)-funded Kentucky Biomedical Research Infrastructure Network (KBRIN) as the lead faculty, cultivating interest in the program and mentoring other faculty submitting
KBRIN funding proposals. Prior to arriving at IU, the associate provost served as a postdoctoral fellow at Wake Forest University.

Data Sources

Data were collected through (a) a pre-survey administered electronically to all study participants, (b) individual participant interviews conducted both onsite and via telephone, and (c) document review. Conducting a successful case study requires careful planning and organization (Yin, 2009). All interviews were audio-recorded, transcribed by the researcher, and stored electronically. Each participant has a unique file on the researcher’s personal computer that contains the recorded interview, the transcribed interview, and researcher reflections and observations from each interview for ease of reference.

Collected documents were annotated with researcher observations as necessary using Adobe Acrobat Pro for ease of storage and recall, then categorized and placed in an indexed digital archive on a password-protected computer. All notes were typed in Microsoft Word. Any documents for which no electronic version exists were scanned, saved in portable document format (PDF) and stored accordingly. This method of organization constitutes a case study database that facilitates data analysis and improves a case study’s reliability (Yin, 2009).

Pre-Surveys

In order to gather background data, I sent each participant a short survey to complete via e-mail. The survey contains questions about the participants’ education, prior work experience, and years of service at both the institution as well as in their current role. Additionally, the survey asked respondents to list their job responsibilities in
order to assess participant perspectives of what they do on a daily basis versus what the job title’s official responsibilities are per the position’s official job description. All 19 study participants completed the pre-survey. This survey can be found in Appendix A.

**Individual Interviews**

As an essential source of case study data (Fontana & Frey, 2000; Merriam, 1998; Stake, 1995; Yin, 2009), interviews were the primary data-collection method. Interviews were in-depth, loosely structured, and open-ended to allow respondents latitude for conveying facts and opinions and to allow for the exploration of new ideas that emerged from the dialogue (Merriam, 1998). I digitally recorded all interviews and then transcribed the audio files for data analysis.

Semi-structured interview protocols (found in Appendix C) were developed to guide participant interviews at each institution. Questions were formed based on my professional experience in research administration, on the recently enacted *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (also referred to as the Uniform Guidance) governing federal grants, and on the current decline in appropriations to state-supported IHEs. I relied upon a network of research administration professionals at other IHEs to pilot questions. Input from these experts on question construction helped ensure the questions were clear, relevant, and connected to the research questions guiding the study.

**Document Review**

The management of an institutional research enterprise invariably generates a variety of documents that include (a) organizational charts, (b) job descriptions of research administration staff, (c) institutional policies and regulations related to
sponsored research, (d) strategic plans, (e) SPO mission statements, and (f) annual reports of grant and contract activity. In total, I collected and analyzed a total of 126 of these documents from all three sites. These documents provided information about how SPOs are structured, how duties are officially codified and delineated, and what policies are in place to govern research activity at each site. Analysis and comparison of these documents provided important insight into how each institution’s research enterprise operates. While much of this information was available online, some was only accessible through direct contact with informants.

**Data Analysis**

Case-study methodology is an interactive and non-linear process where “analysis begins with the first interview, the first observation, the first document read” (Merriam, 1998, p. 151). Insights gleaned from interviews or other sources can help refine questions or influence other components of the data collection and analysis process. In this way, data collection occurs simultaneously with data analysis (Merriam, 1998; Stake, 1995). To analyze data collected at each site, I used a *categorical aggregation* (Stake, 1995) approach, placing data into overarching groups. This method is a systematic and intuitive process “informed by the study’s purpose, the investigator’s orientation and knowledge, and the meanings made explicit by the participants themselves” (Merriam, 1998, p. 179). The pre-surveys and available documents were analyzed first in order to inform the final interview protocol. Once the onsite interviews were conducted with chief research officers (CROs) and SPO staff, I reviewed the transcriptions and analyzed the audio recordings to identify themes or categories concerning organizational restructuring and adaptation.
Due to the potentially large amounts of data, I used NVivo, a computer-based qualitative data analysis software package, to facilitate the data coding process. After inputting all documents and interview transcripts into NVivo, I reviewed all data, using the software to highlight concepts, passages, and quotes. Then, I identified any patterns, relationships, or themes connected to the previously constructed categories. The analysis continued with a further coding of entries in NVivo based on the patterns, relationships and themes discovered, until the chosen categories were reasonably “justified by the data” (Hatch, 2002, p. 157).

Yin (2009) identifies the analysis of multiple cases as a distinct technique. Once each individual site was analyzed, I conducted a cross-case synthesis whereby commonalities, themes, and differences were analyzed to form general explanations and cross-case conclusions. I then analyzed patterns and relationships across themes and across cases in order to construct a rich, detailed picture of the phenomenon (Hatch, 2002).

**Role of Researcher**

Individuals who conduct qualitative studies often explore topics with which they have some level of familiarity because their knowledge forms the basis for the inquisitive skills necessary to form a rich dialogue (Yin, 2009). So, as the primary data collection instrument, I inherently filter data “through [my] particular theoretical position and biases” (Merriam, 1998, p. 216). In this way, I interpreted what was experienced as well as what was gathered from the experiences of others in order to construct a “universe of integrated interpretations” (Stake, 1995, p. 100) that constitutes a thick narrative description of the phenomenon under study.
As a research administrator at a Kentucky ERI SPO, I serve as a mediator among the sponsor, the administration, and the faculty in the attainment and management of sponsored research funding. I also understand the challenges ERIs face in developing research. I have firsthand experience with how an institution adapts to state-level budget reductions, and I understand how federal regulatory changes to research have affected the work of research administrators at my institution. These experiences provide a distinct advantage in conducting this study.

**Quality Assurances**

As the principal data collection instrument, I am responsible for “the selection of data that fit [my] existing theory or preconceptions” (Maxwell, 2005, p. 108). It is impossible to eliminate these factors, and therefore it is imperative for me to recognize the potential role of researcher bias in influencing the study’s conclusions. Throughout the data collection and analysis process, I remained keenly aware of my professional experience as a research administrator at a Kentucky ERI and how this could affect personal perceptions of the data. To accomplish this, I bracketed experiences, reactions, impressions, and reflections during the study in field notes, literally bracketing such observations in the margins of protocols and documents as appropriate in order to separate them from the raw data (Hatch, 2002). I also kept a separate reflexivity journal as a way to both self-assess biases and “to monitor . . . personal reactions to what is being discovered” (p. 88).

To further ensure a trustworthy and verifiable interpretation and presentation of study results, I used multiple sources of evidence in the data collection process. Also known as *data triangulation*, this strategy involves using more than one data source and
one method to arrive at plausible explanations about the phenomenon of study (Merriam, 1998). I relied on multiple interview sources and a variety of documents to establish “converging lines of inquiry” (Yin, 2009, p. 115) that can corroborate conclusions. I also maintained a chain of evidence allowing a third party to “follow the derivation of any evidence from initial research questions to ultimate case study conclusions” (Yin, 2009, p. 122). In addition, I conferred with each participant after data collection, allowing him or her to review transcripts in order to verify the accuracy of what was said during the interviews. This technique is an element of the member checking process that allows participants to corroborate, correct, dispute, or outright reject any collected data (Merriam, 1998; Stake, 1995). Although Lincoln and Guba (1985) assert that a more formal member checking process should also include the sharing of study conclusions and interpretations with participants, such an extensive exercise would require an inordinate amount of the participants’ time and was not included in the study design.

Summary

The purpose of this exploratory study was to investigate the relationship between environmental changes and adaptive responses in Kentucky ERI SPOs aimed at expanding research infrastructures and increasing sponsored research funding. To address these questions, a multiple-case study research design was employed to allow for data collection across three purposefully selected sites. Data was collected through a pre-survey instrument, on-campus interviews, and document review. I analyzed the data using a categorical aggregation approach (Stake, 1995). While the research questions served as a guide to conducting the research, the findings do not directly align with these questions. Rather, several themes emerged. Chapter 4 presents study findings across these
overarching themes. Chapter 5 discusses the researcher’s conclusions, implications for practice, and offers suggestions for future research.
CHAPTER 4

FINDINGS

This study explored the relationship between decreases in state appropriations and changes in selected Kentucky Emerging Research Institutions (ERIs) and examined how internal and external environmental changes influenced adaptive responses including reconfiguring institutional policies, modifying the role of research administrators, and restructuring sponsored programs offices (SPOs) to increase the amount of research productivity and procurement. Three purposefully selected Kentucky ERIs served as sites for the multiple-case study.

The findings reported in this chapter are framed by the study’s two broad research questions. In the following sections, the study sites and participants are identified by pseudonyms in order to maintain anonymity. [See Chapter 3 for descriptions of the three Kentucky ERIs.] In addition, any participant references to specific faculty or administrators at their respective institutions were redacted, and only position titles are used. The two research questions guiding this study are:

1. In what ways has the decline in state appropriations to selected ERIs in Kentucky influenced the work of their sponsored programs offices?
2. How have changes within sponsored programs offices at selected ERIs in Kentucky affected the procurement of external research funding?

Although these initial research questions provided an initial framework that guided the development of the study design, the researcher decided to use the six themes that emerged during the course of the study as a framework for presenting and analyzing the data. These themes are related to these guiding research questions and include: (a)
administrative disconnect, (b) strategic focus and targeted approach, (c) external funding trends, (d) research development, (e) effects of budget cuts, and (f) regulatory changes. These findings will be presented thematically by institution. The first four themes presented are complex; consequently, they are discussed via several subthemes that help explain the larger, overarching theme. All names used here are pseudonyms.

**Administrative Disconnect**

The most pervasive theme discovered throughout that data collection and analysis process was the participants’ perception of a disconnect among senior administrators (i.e. chairs, deans, VPs, president) with respect to the realities of conducting sponsored research at these ERIs. The interviews with CROs and SPO staff provided revealing feedback about how this concept manifested itself at each institution. During the interviews, I did not specifically ask if a disconnect exists; rather, I asked for their opinions on how senior administrators viewed the pursuit of research and let the conversation naturally evolve.

**Appalachian University**

Appalachian University (AU) has the highest amount of sponsored research funding of the three sites studied. Despite this, respondents all agreed that institutional leaders did not consider the acquisition of external funding a critical priority. In addition, respondents suggested that senior leaders had a general lack of understanding about conducting sponsored research, which may have contributed to the institution’s weak regulatory compliance structure prior to the hiring of an associate vice president for research in 2005.
**Prioritization.** When asked about senior administration’s view of research, SPO staff members at AU indicated they did not believe the pursuit of research and sponsored funding was a high priority. Associate Director Tonya Hill remarked, “I would say that there’s not really a big focus . . . our office is not really on anybody’s radar at that level for the most part.” CRO Dr. Jason Park echoed this sentiment, adding context to the notion of prioritization by enumerating the additional expectations of faculty at AU.

Like I said, there’s a lot of other pressures on faculty to do outreach now, to work with schools, to be engaged in community service, and sometimes it’s not always clear where the need for finding external funds falls on the priority list.

Gary Barton, SPO director, stressed the importance of top-down prioritization of obtaining sponsored research funding, referring to it as “the number one factor of whether or not the college itself . . . the faculty in that college are going to go after grants.” To help illustrate the environment at AU regarding the upper-administrative view of research, Barton stated,

The dean in the health sciences . . . is gone now, but he was here for literally 50 years. And, he basically told us from day one—since I was here—that we just don’t do grants here. I mean he literally told us that.

**Tenure and promotion emphasis.** One of the ways in which respondents at AU felt the prioritization of external funding revealed itself was in the institutional tenure and promotion policy for faculty. Barton remarked that if the pursuit of research were “something [faculty] need to do,” it would be reflected in the institution’s tenure and promotion policy. Dr. Park added to this statement by explaining how different types of institutions have different missions:

When you’re in a comprehensive institution and it is a factor, but not a determining one, and faculty can get tenure for doing excellent teaching, providing services, you know, presenting at conferences—and I’m not saying that’s necessarily a bad thing—I’m just saying that the mission is different and the
sticks that one has in terms of tenure and promotion that one would have at a Research I institution are absent for a comprehensive institution, and for a good reason. I mean the missions are different. And so, you know, it takes a lot more effort . . . it takes a lot more infrastructure and it takes a lot more support across university levels in order to make that part of an environment on campus. And it’s one that we’ll continue to have a challenge facing, I don’t have any doubt about that.

The notion of being a teaching institution is not only expressed by the CRO and SPO staff members. The AU policy on tenure and promotion expressly lists teaching as the institution’s primary mission. However, it also recognizes “scholarly/creative activities and service are both important and weighted according to Department guidelines.” This statement implies individual academic departments have the latitude to weigh external research funding success as heavily or as lightly as they want in their tenure and promotion decision-making.

**Operation of the research enterprise.** Research administration is a complex field, encompassing a multitude of responsibilities, including proposal and budget development, faculty training, submissions, contract negotiation, institutional policy creation and regulatory compliance. Speaking about the evolution of the administration’s view on research, SPO staff at AU revealed patterns constituting a lack of understanding about the realities of conducting sponsored research. For example, when asked about changes since taking the position, Barton spoke about a lack of support in post award services.

The grant accounting person . . . didn’t have help. He was doing the bare minimum of anything that had to do with grants. He wasn’t worried about, you know, what we were doing right, if we would get in trouble if anything happened if we had an audit . . . nobody was going to NCURA. Nobody knew anything about . . . all that stuff.
In talking about the evolution of the SPO structure, Barton, who came to AU as an associate director, explained the initial funding arrangement for that position.

It wasn’t paid for by the university. It was not base budget funded. It was funded by [a specific college]. So talk about a conflict of interest. This one college gave the money from their coffers to plant somebody [laughs] in this area to do what they wanted them to do.

When asked if the college essentially allowed for the creation of this position, Barton responded in the affirmative. In discussing how senior administration views research, Hill underscored the dearth of compliance support in the mid-2000s, stating “leadership wasn’t really interested in the compliance side. A lot of focus went on the fact that we have all this money, but not on what’s really the repercussions of not managing it correctly.”

**Limitations of the sponsored programs office.** Another facet of understanding the research enterprise is comprehending the role of the SPO. Dr. Park summarized this succinctly: “I think we have to do a better job educating our higher administration folks in terms of what sponsored programs can and cannot do.” In discussing this idea, Dr. Park pointed to institutional goal setting as a prime example, stating, “One of my sort of pet peeves is when sponsored programs have things like setting goals of increasing external grants each year. So much of that is outside the hands of the sponsored programs office.” In this statement, Dr. Park was referencing an upper administrative disconnect in recognizing the multiple stakeholders involved in motivating faculty to pursue research.

To punctuate this thought, he explained that

Growing your external base is—I mean, I hate using this analogy—but it really does take a village. It takes a good sponsored programs office, but it also takes good faculty. It takes good academic leadership, and it takes making this part of a strategic plan for the university . . . the sponsored programs office can do everything that they can, but if the deans and the chairs and the president don’t
view this and the provost doesn’t view this as important, there isn’t much that the sponsored programs office can do to make that happen.

**Grants as unrestricted revenue.** While sponsored programs funding brings tens of millions of dollars to these Kentucky ERIs, it cannot be considered unrestricted revenue. Such funding is typically intended for specific line items to conduct a predefined scope of work. Despite this, throughout my data collection process, many SPO staff remarked at how senior administrators viewed grant funding in this way. While no one at AU made such a statement, Barton himself did, referring to it as “a revenue-generating stream in the times when you need that.” Dr. Park, however, did reference the topic when talking about the state’s capping of its indirect cost rate on grants: “People always view indirect costs as a profit and not as a cost of doing business.” Additionally, he added, “Bringing in the dollar isn’t always necessarily the right thing to do if it costs you two dollars to do it.”

**Push for productivity without resources.** Another recurring subtheme in the administrative disconnect was a push by the senior administration to increase external funding activity (both proposal submissions and awards) without providing the SPO resources to attempt such a goal (the aforementioned limitations of the SPO notwithstanding). Sarah Hampton, grants and contracts specialist, noted the president made specific mention of the SPO during the most recent convocation, and as a result she suspects “he’s going to push more research, more grants, probably hit that harder.”

Despite such an emphasis, the SPO has not received any additional resources; in fact, Barton put it bluntly when referring to the size of his staff, which is the smallest of the three sites: “I think it’s ridiculous we only have four people. We should definitely have more. But, either we’re just not yelling enough or whatever, but we’re getting the
job done.” In the same vein, Barton acknowledged SPO staff was “way overworked,” but budget constraints currently limit the option of hiring additional staff. Analyzing the job descriptions for AU’s SPO staff, the director and associate director are tasked with handling all of the proposal development and submission activities at the institution. However, interviews with the SPO staff revealed Hill handles the majority of these duties alone.

**Need for an electronic research administration system.** As sponsored programs activity has increased, many larger institutions of higher education (IHEs) have transitioned to an electronic research administration (ERA) system that automates the pre-award budgeting and internal routing of grant and contract documents. However, the majority of third-party ERA solutions are extremely cost-prohibitive for state-supported ERIs. When discussing the pre-award system of routing internal forms and approvals for grants at AU, Hill lamented over their current paper-based process: “I hate it. I want an online system, but they’re all just so expensive.” Further discussion of the internal approval process with Hill revealed how it affects productivity.

The faculty fill [internal forms] out. You can tell they don’t always do it correctly [laughs] so we correct it once it gets here. But we have the conflict of interest, financial disclosure here . . . the project director signs, then the chair and the dean, and then once it gets here I review everything and then [the SPO director] signs, and then we have to take it to financial affairs . . . and the person who signs it now . . . he’s not even physically here to sign things. He doesn’t appreciate that we’re doing things that have to go out that day.

**Metropolitan University**

While Metropolitan University (MU) has the lowest amount of sponsored research funding of the three institutions studied, they have a larger SPO staff than AU. Respondents concurred that institutional leaders did not understand the complexities of
conducting sponsored projects. Respondents pointed to MU’s loose organizational research structure as evidence of this lack of understanding.

**Prioritization.** One way the priority of research is demonstrated at MU is in the organization of its research enterprise. While the other two IHEs in the study have CROs that are in charge of only research or research and the graduate school, Dr. Shelly Lawrence, the CRO at MU, has oversight of six separate divisions, including research. This structure suggests that this CRO has less time to devote to efforts toward research activity than counterparts at the other sites.

Brian Taylor, the SPO director spoke honestly about the senior-level administrative prioritization of research, noting, “There’s never been any consistent message from the deans or the provost or anything about, ok, this really should be our priority here at the university even though there have seen more proposals from certain areas than from others.” Robin Bradshaw, a senior grants and contracts administrator, spoke about prioritization in a more indirect way when explaining how faculty were unable to find cash matching support for proposal budgets.

There was a time where I feel like every single person who came into our office to submit was asking us if we could put up money for their grant, because they just couldn’t find it anywhere else. And that’s kind of slowed down a bit, but it was starting to get kind of intense. I mean, we don’t have that much money to give out, and they were frantic. They couldn’t find any other offices in the institution to support them. So . . . that’s a problem.

**Tenure and promotion emphasis.** Casey Robinson, a senior grants and contracts administrator, explained the difficulty in getting faculty who submitted proposals that were denied to resubmit them: “Because it’s not mandated by their college or expected for their tenure, they don’t seem to follow through or be that interested.” Another facet to
the tenure and promotion emphasis is the widespread view of MU as a teaching institution. Taylor commented on this pervasive perception.

[MU] has always been primarily a teaching institution. That’s been what the priority has been across the board. And there are some departments that still believe that’s what the mission should be. We should be teaching and not doing research or anything like that. So, there’s a certain amount of fighting within the faculty about that.

MU’s tenure and promotion policy does place a “major emphasis” on teaching, but also refers to research and creative activity as “the other fundamental category.” Because the third category of service is not preceded by an adjective implying a hierarchy of importance, one can presume that research and creative activity would carry more weight than service in tenure and promotion decisions at MU. At the same time, the policy also gives department heads, deans and the provost leeway in making “decisions regarding the value, appropriateness, and prioritization of faculty activities.”

**Operation of the research enterprise.** When asked about the senior-level view of research at MU, Taylor spoke about a lack of understanding of not only the work involved, but also the actual composition of the dollars received.

[Senior administrators] like seeing the money come in. I don’t think they really understand some of the work that goes on to make those things happen, whether it’s on the proposal end of what time it takes to prepare something for a research proposal, or the work that’s got to go into it once it comes on board. They like seeing the money come in, but I think they’re somewhat oblivious as when they see numbers from our office how much is really research versus how much is other kinds of program stuff. They tend to see it all in one pot.

Paul Goetz, a senior grants and contracts administrator, echoed this sentiment, noting institutional leadership was concerned about a reduction in external funding from one year to the next after some congressional appropriations boosted totals in one year: “You
try to explain that to VPs and they can’t get over the bottom line . . . they just sort of
focus on the bottom line anyway and we have to go with that.”

One of the more direct representations of a lack of understanding on the part of
upper administration with regard to running the research enterprise came from Kristin
Collingsworth, the SPO specialist. She described the experience of a former provost who
was now seeking a grant as a faculty member.

She went through the process as a PI—a regular, normal, everyday PI—and she
had to do all the facets of getting the proposal ready and working with us. She
was astounded at what went into it, what roles we played . . . the actual extent of
what our knowledge base had to be to get her prepared and to get everything
done. And she said, “If I had known as a provost what went into this, I would’ve
approached course release and different things pertaining to faculty being able to
submit grants very differently.”

Another manifestation of ignorance about the process of running the institutional
research enterprise can be found in its organizational structure. MU is one of two study
sites that have established a research foundation. In my conversation with Taylor, I asked
if there was a strategic reason behind MU establishing the research foundation, to which
he replied,

There are a number of grants that we apply for that require you to be a 501c3, and
so the research foundation is very handy for that because it does have that
distinction. We’re able to utilize it for that on a pretty regular basis. But, I think it
was originally established more in the event of intellectual property that might
happen, or tech transfer. People want to do things that are maybe inventions or
anything in order to run it through a research foundation instead of the main part
of the university. That was before I ever got here. As it turns out, there really
hasn’t been a whole lot of that going on. We don’t have an engineering school or
a medical school or anything like that, which is usually where a lot of the
inventions come from. And so, there have been a few things here and there where
people have inventions that are happening, but there’s been very little in the tech
transfer area that would really effectively fall under the research foundation. So
right now there’s been a number of different discussions about that and . . . what
basis we should continue it.
Speaking further about the research foundation, Taylor stated that the foundation “doesn’t have any employees at all, so everything still gets funneled through our office.” In these ERIs’ current resource-scarce environment, one can argue that the MU research foundation is not yielding enough benefits to merit expending the necessary time and monetary resources to keep it active.

**Limitations of the sponsored programs office.** In my interviews with MU SPO staff, they spoke extensively about the senior administration’s push to increase external funding amounts. Goetz said, “I know that at least for the past couple of years we’ve had to answer to why the numbers are down.” Taylor shared the same thoughts but also spoke about the many institutional stakeholders involved in motivating faculty to pursue external funding:

> There are certainly people [who have] said, “Whoa, let’s get the numbers up, let’s crank out more grant proposals” and everything without understanding that our office doesn’t really control that completely. If the faculty are saying [laughs] “We don’t have time to do it,” there’s not a lot we can do about getting people to apply if they don’t really have the time because of their course loads or whatever.

**Grants as unrestricted revenue.** Several SPO staff expressed the notion that MU leadership perceives grant funding to be unrestricted revenue. When discussing reasons why senior administrators seem to be pushing the pursuit of external funding more dedicatedly in recent years, Bradshaw stated, “I think it’s getting pushed more lately because of all the budget constraints that we’ve had. So, it’s being more heavily talked about because it’s a way to bring in external money versus other ways.” Collingsworth put it more frankly: “They only get 10 percent of the accumulated IDC [indirect costs]. That goes to the general fund, so it’s not a money making venture for them in that respect.” Taylor continued to address this theme by stating,
Sometimes I think they look at the money coming in as [if] this is going to solve all our problems in a tight financial crunch. Well, I’m saying that doesn’t really help. These [are] programs we wouldn’t be able to run otherwise, but it’s not solving the other financial things at the university. It’s extra stuff.

**Push for productivity without resources.** During my interviews with MU SPO staff members, we talked at length about the challenges both they and faculty face in the attempt to increase sponsored program activity and about how this push was at odds with the senior-level administrative prioritization of research. Staff expressed this more in terms of faculty time rather than SPO personnel. Bradshaw talked about the difficulty faculty members face in obtaining course releases to conduct research and about additional matching money from the institution when required for an application. “I do think it’s a priority, but [senior administrators are] not really making that easy,” she said. Collingsworth reiterated this thought, noting faculty do not feel like they have time to commit to pursuing grants because “course loads are heavier and course releases are coming fewer and farther between, and they’re having to jump through a lot more hoops to get [release time].”

**Need for an electronic research administration system.** While Goetz explained the office’s document routing system was a “hybrid” of electronic and paper-based systems, the process seemed no less cumbersome than a purely paper-based method:

> When it gets to the PI, there’s not an electronic signature. They print it out and sign. But, then we allow them to scan it to the next person. So, we don’t force the physical copy to be walked around so to speak. If they can, that’s great, but we’re sort of moving to now accepting . . . a high quality color scan, and we can clearly see it’s ready to go.

When I replied that this process sounded just as burdensome as a full paper-based system, particularly in light of the fact faculty can choose to scan or physically route, Goetz
replied in the affirmative. “It can be cumbersome,” he said. “Sometimes, we’re like ‘where the heck is the routing form? It left this place, and it’s in limbo.’”

While Dr. Lawrence did explicitly express interest in exploring an ERA system, Collingsworth spoke about previous attempts to do so, implying the SPO explored homegrown solutions rather than solicit quotes from third-party companies: “Sometimes, we’ve found that our IT setup here doesn’t accommodate a lot of that stuff yet. We’ve explored it before, and the times we have, they said we’re just not equipped to handle it yet.”

**Industrial University**

Industrial University (IU) was unique among the sites studied in that respondents believed senior leaders did place a high priority on the pursuit of sponsored funding. IU’s SPO staff is the largest of the three institutions, and senior leaders have invested financial resources in strengthening efforts to secure external funding. Respondents indicated that a senior-level administrative disconnect emerged from the institutional research structure and strategic direction.

**Prioritization.** My interviews with the CRO and SPO staff at IU revealed a different perspective. Their perception was that senior administrators did, in fact, view research as a high priority. This notion is undergirded by an institutional strategic plan that features the pursuit and growth of research more prominently than the other two study sites. Comments from my conversations at IU attributed challenges with respect to building a successful research enterprise to both the leadership styles of various CROs and the high leadership turnover and structural reorganization that led to instability in both the SPO and among faculty.
Tenure and promotion emphasis. Much like the other two study sites, IU’s tenure and promotion policy identifies teaching, research and service as its three main components. However, unlike the other two universities, IU’s policy neither assigns weight or preference to these criteria nor explicitly gives departments and colleges the latitude to do so. Despite the perceived senior-level administrative prioritization of research shared by the SPO staff, associate director Margaret Sloan spoke about tenure and promotion as a barrier to engaging faculty in pursuing external funding.

The faculty say there’s all sorts of reasons why they’re not applying for [grants], and I think mostly because it’s not tied to their tenure and promotion, which is pretty detrimental from our perspective. But I think from theirs, it’s not. Obviously, that’s a huge academic affairs issue in terms of what the faculty are here to do, and [IU] really prides itself on being a teaching institution.

IU’s tenure and promotion policy is also unique among the study sites for having a specific designation for a research faculty member. While research faculty members are not eligible for tenure, one can argue its inclusion in the policy speaks to the institution’s focus on pursuing research. However, Natalie Porter, the SPO director, stated in a follow-up conversation, “Only a few [faculty members] were given this designation,” and it was being “moved away from” when the CRO who initiated it stepped down from the position.

Operation of the research enterprise. Instances pointing to a senior-level administrative lack of understanding about running the research enterprise at ERIs revealed themselves at IU not so much in ignorance to the mechanics and realities of pursuing and managing sponsored programs, but rather in a misguided strategic research direction enacted by previous CROs that hampered productivity and fostered mistrust among the faculty. During my interviews, SPO staff members spoke at length about their
perceptions of this direction, particularly when the president hired a new provost and CRO in 2010. For example, Sloan remarked,

That’s when the president [announced that] we’re going to push for this big research change, and I even believe that he may have told [the new CRO] that we were ready for it. And I think in some pockets, we were. But, in most pockets, we were not. I mean, just out of the starting gate, it was like oil and water with [the new CRO] and the faculty.

When asked about the history behind the move to hire these new leadership positions, Porter stated the president hired the provost and CRO back in 2010 “in part because they came from [research-intensive IHEs].” Further, she noted that “it was a pretty drastic change when [the new provost and CRO] came on board, and I don’t think the faculty were prepared for it.” Porter spoke more in-depth about some of the specific strategies the CRO advocated. She noted that the CRO was interested in economic development initiatives and pushing faculty to develop intellectual property that could be commercialized for profit. Porter stated that in order to accomplish this, the CRO wanted faculty to submit Small Business Innovation Research (SBIR) grants, which are highly competitive and funded by a variety of federal agencies with the goal of supporting technological innovation. “We struggled with [this research direction], Porter stated. “There was a big emphasis on [these] projects that were not necessarily, I think, going to pay off. And a lot of money and a lot of time were put into those projects.”

The SPO talked further about other aspects of the research leadership at the time that created friction with faculty. Porter spoke about how internal funding for research support was handled, stating that “in the past, it wasn’t transparent how [internal research support funding] was given out.” According to Porter, the CRO “was famous for saying you know, if you need money, come and ask. Not everyone was comfortable with coming
and asking. The people who did got it. So now, there’s much more of an effort to be transparent.”

In addition, IU has an established research foundation, and much like the SPO at MU, some IU SPO staff question its usefulness. Sloan provided her assessment of the foundation’s status.

It’s a bank that just funnels money through. And I think there’s potentially a lot you can do with it if you’re at a [research intensive university]. But at a comprehensive, it doesn’t make a lot of sense. There’s not enough [indirect costs] sitting there to generate any sort of interest or its own income to be able to put back. It’s not even generating enough money to sustain itself . . . it [wastes] money.

When I asked about the structure of the research foundation, Sloan said,

They have a president, and it’s our dean of the science college. There’s a board [that is] made up of people here and from outside in the community. They meet, but . . . I don’t know what they do. There are no outcomes to the actual research foundation . . . [any] production that I can see. And again, all the money is coming from the grants and contracts, so . . . Honestly, I perceive [the SPO] as being the actual staff of the research foundation.

**Limitations of the sponsored programs office.** Regardless of the intentional focus on research at IU, examples of a senior-level administrative lack of understanding about the realistic role of the SPO in the research enterprise emerged throughout data collection at IU. While the institutional strategic plan aims to increase both annual external research expenditures and sponsored awards, specific strategies to achieve these goals do not rely solely on the SPO and include institutional resources. However, the strategic plan includes financial assumptions through fiscal year 2017 that include salary buyout from externally sponsored funding as part the institution’s total revenue. One can argue budgeting such an unpredictable funding stream as part of an institutional budget is at the very least a risky proposition.
My interview with Porter revealed another way in which institutional leaders displayed a lack of understanding about the limitations of the office. When speaking about the goals for research set by the provost (who was interim CRO at the time), she provided this assessment.

He wanted to raise . . . bring up the [indirect cost] rates. How are we going to do that? We’ve got a lot of contracts and a lot of grants that are capped at 8% . . . all the state grants [are], as you know. We have a lot of CPE money to train teachers. There’s no [indirect costs] on that [type of external funding].

**Grants as unrestricted revenue.** In addition to the inclusion of salary buyout from sponsored funding as a portion of the institution’s revenue projections for next several fiscal years, Sloan expressed perceptions that also point to a senior-level administrative view of external funding as an unrestricted revenue source. When I asked about ways in which senior administrators articulate their stated focus on research, she replied,

We have a president who does value research and also sees it as a source of funding to help with the budget issues that we have. We know in research administration [grant funds are] not necessarily . . . revenue like you would see in an office of development. They are supplemental. They are enhancing funds. Often times we’re spending more money to actually do the research [and] not really gaining anything other than . . . scholarship and the activity of our faculty working with students [to] improve the general research capacity and infrastructure.

Throughout the interview, Sloan made several more references to top-level administrators seeing “sponsored programs as a way to compensate for the budget cuts and the downturn.”

**Push for productivity without resources.** Unlike the other two study sites, IU SPO staff specifically noted the presence of resources behind the push for productivity. In
discussing how the administration articulates its stated support for expanding research efforts, Sloan noted,

I do think that [IU] supports [research] by putting their money where their mouth is in that respect—saying research is important—it’s not just a directive, go out there and get a bunch of grants. It’s about, we’re going to support you so you can go out and get a bunch of grants. So that is definitely a positive. Those internal grant programs. Any of the professional development programs that money gets put toward certainly are good. But also just seeing the importance and necessity of somebody like me who does trainings and the education.

**Need for an electronic research administration system.** Of the three study sites, IU is the only institution with an established ERA system. While the SPO initially contracted with a third party company for an ERA solution, they cancelled the contract because, according to Porter, “a canned version . . . didn’t work well for us.” Instead, IU created its own system that “works for us,” according to Porter. “Everyone knows where the files are. Everyone knows how to manage them.” When I asked about how the implementation of an electronic system affected the SPO, Porter responded, “One of the big jobs in this office was moving files around. When we went electronic [we realized] . . . we used to spend a ridiculous amount of time searching for and filing proposal and awards. [The electronic system] has been a huge time saver.”

**Lack of involvement in decision-making.** Another subtheme related to a perception of an administrative disconnect at IU emerged during my interview with Porter. When talking about recent personnel changes at the CRO and provost level, I mentioned that this juncture may offer the opportunity for the SPO to help shape the institution’s future research strategy. In response, she reflected upon the lack of inclusion and autonomy that punctuated the previous regime, noting the current administrative
structure with respect to research would allow her to have an influence “for the first time since [she’s] been here.” When asked to elaborate on this statement, Porter said,

   Previously, [the CRO] made decisions. I worked very closely with him and we talked about things. I advised him, and he advised me, but he was very much calling the shots. With [the provost/interim CRO], he was totally calling the shots. So, yes, now I feel like I actually do have the opportunity to have an influence.

At the conclusion of the interview, in speaking about the future of the SPO, Porter added another perspective about having involvement in the decision-making process:

   As I’ve said in terms of my role, I’ve really never been allowed to run my own shop. But, even that in terms of my staff and all, leadership wise and everything, they knew I wasn’t making the decisions, and sometimes they knew they could go straight to [the CRO] and get what they . . . I mean . . . it was a weird dynamic.

**Strategic Focus and Targeted Approach**

Despite the perception of a senior-level administrative disconnect to the intricacies of fostering and conducting sponsored research at the studied ERIs, evidence collected during the study also revealed a distinct and significant trend among these institutions toward establishing a strategic research focus and developing targeted approaches to support it. Interestingly, SPO staff members at the three universities studied all noted the lack of a cohesive institutional strategic focus for research. As with administrative disconnect, the theme of developing a strategic focus and targeted approach is multifaceted. Consequently, I established several subthemes to help explain how this major theme takes shape at the three study sites.

**Appalachian University**

The establishment of a strategic focus at AU largely began with an influx of congressionally appropriated federal funding for safety research and initiatives after the September 11 terrorist attacks on the United States of America in 2001. In addition,
respondents agreed that the hiring of an associate vice president for research in 2005 led to the creation of a focused external funding compliance policy base.

**Establishing research priorities.** Dr. Park spoke at length about the push to identify and prioritize opportunities for external funding that could positively affect the entire institution: “We have an obligation to make sure that when we go after external dollars . . . it fits the institutional mission [to create] more of a targeted approach to what types of grants and contracts fit within our institutional profile.” While Dr. Park indicated the strategy of identifying and pursuing external funding that could have a university-wide impact was “more of a long-term strategy,” he also spoke about some success AU has already realized by taking this approach.

I think we took a good approach a couple of years ago when we were looking at a proposal to the National Science Foundation to establish a biological field station. We really looked at this as a systematic approach. It was a program that we targeted [and] wanted to go after because it really fell in our wheelhouse in terms of our strengths. We funded faculty to basically do a very good needs analysis and initial proposal which was not funded. But, we had a lot of very positive feedback [on the proposal]. Then, we pursued that through sort of a revise and resubmit process and basically ended up having that funded . . . I think that facility’s just about ready to open up in a few weeks.

**Policy creation.** Institutional policies governing sponsored research ensure funded projects are being conducted in accordance with all applicable sponsor guidelines. This includes a variety of particular issues such as the protection of any human or animal subjects involved, the proper spending of external funds, and the reporting of any effort expended by employees on externally funded projects. In my conversations with the CRO and SPO staff at AU, it became evident that the institution did not give much focus to sponsored research policies prior to Dr. Park’s arrival in 2005. “We’ve gone through . . . a very challenging time,” Dr. Park said, “I’d say in terms of just making sure that we met
the compliance standards.” He noted upon his arrival at AU that a strong policy base
“was an area of deficiency,” and thus he worked with other institutional stakeholders to
“build a strong policy base.” In talking about how this affected grant seekers, associate
director Hill stated,

Before [the CRO arrived] things were just kind of do-whatever-you-want [attitude]
with grants. Grants were an easy way to make extra money . . . and as that started
to get cleaned up, a lot of the other people who were doing grants at that time sort
of dropped [out].

Financial investments. In addition to defining solely research priorities, each
institution’s leadership team has committed financial resources to help advance research
and scholarship. During my interview with SPO director Barton, he told me about the
president’s recent pledge of $100,000 per year over the next five years to establish a new
research and scholarship fund. Barton then noted, “it was matched by . . . our board [of
regents] chair, so I think it’s like $200,000 starting this year.”

Growth and change in the SPO. As evidenced by the lack of strong research
policies, one can argue that AU did not have a critical mass of SPO staff; in fact, Barton
stated during our interview that there were only two SPO employees prior to his arrival in
2000. Further, he spoke about the hierarchal structure prior to the current CRO’s arrival:

My boss . . . had 15 directors answering to her. There was no way to even think
about being an important part of any kind of puzzle. She didn’t have any time, so
at least [the president] put in the VP for research and the dean of the graduate
school. She kind of carved that out, just looked at other models that you see a lot
of places.

Hill also spoke about the importance of creating the CRO position.

There had never been an associate vice president for research at that time.
[Sponsored programs] was under university programs and the graduate school . . .
but [there] wasn’t a focus on research. So [the president] created [the associate
vice president for research position] and hired [Dr. Park]. She [then] gave him
money [to initiate] internal funding programs . . . so I feel like she was really
supportive in hiring [the CRO] and getting things going in the right direction.

With respect to growth in the office, external factors largely dictated the addition of positions in the SPO office at AU. When I specifically asked what drove growth in the office from two employees to five, Barton pointed to millions of dollars in congressional earmarks diverted to the institution for safety research and initiatives in the wake of the September 11 terrorist attacks. “It was all of that [congressional] money,” Barton said. “So yes, receiving all that money is what . . . yeah, no question. It wasn’t us, and they wanted that more money. That was the perfect storm.”

In addition to a financial windfall that spurred SPO growth, Hill disclosed another external factor driving SPO change. In talking about the institution’s efforts to develop comprehensive policies governing external funding, she spoke about some audits that “woke some people up.” These audits, she noted, created “more of a focus on compliance, so we were able to get a compliance coordinator position hired on at that point, so that’s how she ended up here.” Barton also implied that compliance needs were a major factor in senior administrators allocating funding for SPO staff growth: “If you can show again a compliance aspect, then they kind of perk up and say ok, maybe we need to add some lines there.”

**Hiring research-oriented faculty.** As the initiators of research and project ideas, faculty are the engines that propel sponsored program activity. Throughout my interviews with SPO staff, they reported an intentional move to hire more research-oriented faculty. In my conversation with Dr. Park, he noted the institution had hired faculty in the past few years “who are more interested in pursuing grants and contracts.” When I asked if this was a purposeful move, he responded in the affirmative, and the explained why.
I think one of the things that's really helped us in the last couple of years in particular was having some very first-rate facilities. For us, the new science building has certainly added in terms of not only providing a great physical space, but also a lab [and equipment]. So, the start-up funding, things like the equipment that's already there has been a very strong recruiting tool for us. We recognized there was a need, and I think it's paying off in terms of the quality of the faculty hired. It was some long-term initiatives that were paying off. Of course, the job market also has worked in our favor over the last couple of years.

**Metropolitan University**

Respondents at MU concurred that the new CRO was the main catalyst for the move toward establishing a focused approach to pursuing sponsored funding. While internal compliance policies were already established, the new CRO initiated internal policies related to the submission of proposal materials to the SPO as a way to increase the quality of faculty proposal packages. In addition, the new CRO is spearheading growth and change in the SPO by modifying job descriptions and instituting a peer review of the office.

**Establishing research priorities.** When asked about trends with respect to research and sponsored program activity, SPO director Taylor stated, “Right now, the university is trying to get a better handle on what should really be the priority. We’ve never had a real good definition of what is the research priority here.” This shift toward establishing a focused research mission is also apparent at the research administrator level. In my interview with senior grants and contracts administrator Goetz, he noted, “It seems like the emphasis went from the numbers being high to the quality of the proposals and the tie-in with the greater strategic plan, whether it means anything to this institution or not.” During my conversation with Dr. Lawrence, the new CRO who began in July 2015, details about a new initiative designed to establish research priorities emerged:

One of the things I have done since I’ve been here is I suggested that we have a
signature and emerging area research competition to see where the areas of strength and interest are. Part of the hope with that is that if the university could decide where our scholarly strengths lay, that would assist the [SPO] staff with being better able to identify opportunities. We put forward an RFP for transdisciplinary groups of faculty to come together and submit concept papers on areas where they feel we have research strengths. And, once we review those concept papers we will invite certain groups to move forward with full proposals.

**Policy creation.** In addition to policies aligning institutional practices with federal, state, and other sponsor regulations, IHEs also create internal policies governing research-related practices. In my interviews with SPO staff, they talked about a newly implemented policy initiated by Dr. Lawrence regarding internal deadlines for submitting proposal materials to their office. The policy states faculty and staff submitting grants must provide the SPO their materials for review no later than five business days prior to the deadline. Many expressed their concern over its potential affect on research productivity. Senior grants and contracts administrator Bradshaw stated, “We were kind of worried in our office. These new policies, these hard and fast rules will really turn people off. She didn’t seem to be concerned about that . . . she said if they don’t submit, then they don’t submit.” Taylor also spoke about this policy, noting it was “definitely a change in the culture, and that was the whole point of the thing.”

When I asked for the impetus behind this new policy, Dr. Lawrence replied, “I felt like our pre-award specialists weren’t really functioning as pre award specialists. They were just functioning as people to help you with your budget.” Speaking further about the new policy and its potential affect on faculty, Dr. Lawrence noted, “What I tell faculty as I go out and they complain is that this is not meant to be punitive. This is meant to help you.”

In response to this new policy, one of MU’s colleges created its own two-week
deadline for reviewing grants. Taylor stated the college’s dean implemented this policy because she was “getting stuff in the last couple of days before something was due and did not really have time to look at it and to make her own comments on what exactly should go forward and what shouldn’t go forward.” As with the SPO internal deadline, Taylor expected these policies to spur faculty to start working on grant applications earlier, “so they’re not saving it all for the last couple of days before it’s due.”

**Financial investments.** At MU, an example of financial investments in enhancing research emerged from my conversation with Dr. Lawrence. In discussing the recently implemented initiative to better define the institution’s research priorities, she talked about university leaders’ support for the idea by stating, “the administration supported that wholeheartedly and has put funding behind it, so I think that’s a pretty good example of them wanting to support scholarly work.” When asked to elaborate on how the funding would work, Dr. Lawrence continued, “It will be custom built. [Faculty] will be asked to submit a budget, which in their budget could include a reduction in teaching load, student support, supplies. It would just depend on what the proposal is all about.”

**Growth and change in the SPO.** Taylor admitted the SPO at MU “was kind of a mess” when he arrived in 2008. He noted the office had several open positions and “hadn’t had a director for over six months.” Like the SPO staff at AU, people at MU pointed to the need for compliance as a driving factor in SPO growth. Taylor stated,

> We [had] such increased volume in the area of IRB especially. Somewhat in IACUC, but not as much so. So we really needed additional support in the whole compliance area in order to keep that functioning and moving along like it should.

Taylor also mentioned the addition of another grants and contracts administrator position as an example of growth.
During my interviews with SPO staff, it became clear that Dr. Lawrence had been the initiator of numerous changes in MU’s research enterprise. In my conversation with Goetz, he pointed to the internal deadline for submitting proposal materials to the SPO, the move to place more emphasis on research development activities, and the launch of an external peer review of the office and its processes as major changes. When I asked if these changes began to occur after the new CRO was hired, he responded in the affirmative.

Other staff also spoke about changes since the CRO started. Bradshaw stated, “Things have changed. [The CRO] definitely has her own ideas . . . [she is] definitely more hands on I think, and it’s not necessarily a bad thing, just a little bit different than what we’re used to.” SPO specialist Collingsworth reiterated this response, stating, “[The CRO] is very grant focused . . . probably more so than her predecessor.” One can infer from this information the new CRO has been a catalyst for change in the MU research enterprise.

**Hiring research-oriented faculty.** While there were no direct references to hiring research-oriented faculty, during my conversation with Dr. Lawrence, she revealed details about a plan to reward faculty who are successful in securing externally funded research. When asking about the senior-level administrative view of research at MU, she replied,

The other reason I know they feel it’s important is they are working on transitioning to a lighter teaching load for faculty who meet a definition of active scholar. That definition has yet to be determined, but they’re moving in that direction.

When I asked if this would come in the form of a formalized policy, Dr. Lawrence responded affirmatively. One can argue such a policy could be a strong recruiting tool for
the university in attracting more research-oriented faculty.

**Industrial University**

Respondents at IU indicated that while a strategic approach to research existed, it was established by the former CRO. Similarly, the growth and structure of the SPO was also dictated by the former CRO. Now that new research enterprise leadership is in place, the institution is reevaluating its strategic research focus.

**Establishing research priorities.** With respect to research priorities, my interviews with IU SPO staff provided evidence of a state of flux, as the former CRO had previously been setting the priorities, and the leadership turnover has been high. As associate director Sloan noted, “In my seven years, I’ve had 12 bosses.” SPO director Porter noted the previous CRO “really emphasized economic development,” but under the current provost, “the emphasis is much more on faculty-driven research.” In discussing the leadership changes and research priorities, Porter reflected on a desired strategy for establishing research priorities moving forward.

The one thing I see, we don’t really have a niche area yet for research. Where are the next opportunities? Where is the funding? So, I’d like to see that evolve. I’m really pushing now for us to really take a step back and start looking at what are the state strategies, taking the strategies and matching them to our strengths, and investing in that.

In general, however, IU’s strategic plan does state an institutional desire to “identify large-scale, cross-disciplinary efforts and target appropriate external funding sources,” which implies an emphasis toward projects that can have an institution-wide impact.

**Policy creation.** While policy creation did not emerge as a significant subtheme to help explain IU’s move toward establishing a strategic focus and targeted approach regarding the pursuit of sponsored funding, some SPO staff spoke about modifying
existing policies. While talking with senior grants coordinator Elaine Wiles about changes made after the federal government implemented new regulatory guidelines for federal awards, she mentioned the need to revisit institutional policies: “We are actually working on a time and effort policy, to make it more clear.” Additionally, Porter has been working on revising the intellectual property policy in order to address procedural deficiencies. Porter also stated that the intellectual property policy “did not include a student component.”

**Financial investments.** Specific goals and action items in IU’s strategic plan related to the research enterprise imply a financial investment in support of research. For example, one goal in supporting research aims to “enhance Research and Creative Activities . . . to support faculty research and scholarly activity across all disciplines.” Action items under this goal include “Regularly send faculty to visit funding agencies,” and “Enhance and expand online research guides and access to e-books” as specific items attached to a financial investment.

Another example of the institution’s financial investment in research is $100,000 in funding the administration put forth to establish *quick turnaround grants* for the current fiscal year. These grants, according to Porter, are intended to provide faculty “between $1,000 and $3,000 [for] someone [who] needs to go to the archives in London and the library to do [research]. The whole idea of these is for a one-shot, I need it now deal.”

**Growth and change in the SPO.** Unlike the other two universities, where SPO growth has been predominately driven by external factors, growth at IU has been dictated internally, the result of intentional structural changes made in an effort to become more
research-oriented. Dr. Cindy Danvers, the current interim CRO who has been at IU since 1991, provided a critical historical perspective about the institution’s focus on expanding sponsored research activity.

Over the years it transitioned to an increasing emphasis on research in general, and increased emphasis on not just seeking, but being more successful in getting extramural funding. And, at sort of a transitional point there was an individual that was appointed to be the head of research. They reported to the provost and . . . at that time . . . the upper administration really decided that they wanted to have a much more deliberate emphasis on research and on grant seeking and obtaining grants and contracts.

While the structural changes are indicative of IU’s intentions to make research a priority, the perception among SPO staff was that the changes and growth of the structure actually hindered research growth. Sloan elaborated on this idea.

Even before [the current director’s] arrival, we had so much turnover at the top and different structures. [We had] to deal with different philosophies and agendas and personalities, and I think if anything has hampered [sponsored programs growth], it’s that. All that change. Because once you get started down a path . . . dealing with one person’s way of doing things, and then have to abruptly stop and redirect . . . you have to start over.

In 2010, this move toward a focus on research continued when IU made a significant move in its research enterprise by creating and hiring an external, vice president-level CRO position that reported directly to the president, which was a hierarchy unique to all Kentucky ERIs. This hire, Porter noted, was part of a push from the president to “make research more of a priority than it had been.” During this time, the research organizational structure became highly differentiated with separate units under the VP for research related to (a) economic development, (b) marketing, (c) a research foundation, and (d) sponsored programs. As previously mentioned by SPO staff members, the structure did not work for a variety of reasons, including the leadership style of the former CRO and the institution’s unpreparedness to make such a drastic shift. Regardless,
one can argue the position is representative of IU’s dedication to growing external research.

The current hierarchy places the CRO at the associate provost level, and Dr. Danvers is a long-time IU faculty member. Given the sharp difference in the previous CROs and the current CRO with regard to background and work history, one can argue the new structure is an effort to back away from the previous hierarchy. At the same time, as Dr. Danvers noted, “The [position] that I have has a much more narrow set of responsibilities and expectations [that are] much more focused on the [SPO].”

**Hiring research-oriented faculty.** Interviews with leaders of both the CRO and SPO revealed ways in which IU has focused on hiring faculty with research experience. When I asked if certain departments were being more discerning in their hiring processes with respect to research activity, Dr. Danvers replied,

Yes, [certain departments are] looking more at the potential for getting extramural funds and putting that into the ads [for new faculty]. For years in certainly [Biology], having post doc experience has been [an important attribute], and that shift hasn’t necessarily happened in other departments [or] in other colleges. But, I think that’s really important in terms of bringing in [faculty] that have been in that world and have written grants, have participated in writing grants and have participated in grant funded research. It’s just a different level coming in when you’ve had post doc experience.

Sloan also noticed this trend and made comments similar to those expressed by AU’s CRO. She spoke about how the economic downturn had allowed the university “to hire some really good people, because they weren’t able to apply at . . . different types of universities.”

**External Funding Trends**

Understanding external funding trends was a critical component of this study. An analysis of each institution’s annual reports on externally funded activity, however, did
not yield any significant trends. While each institution currently publishes annual
sponsored programs reports, there are several inconsistencies among them that create
difficulties with regard to making comparisons. For example, each institution’s SPO
assembles and presents different financial information related to externally funded
projects in different ways; consequently, it is difficult to compare each ERI’s sponsored
funding data in a systematic way. For example, AU and IU both provide a breakdown of
awards by function (i.e. research, instruction, service) while MU does not. In addition,
this information is not presented uniformly across years. So, for example, one annual
report contains data related to specific funding categories in one year, while these data
are absent from another year.

Further, AU did not compile formal annual reports until 2007. As such, the
National Science Foundation’s (NSF) Higher Education Research and Development
Survey (HERD), which serves as a census of colleges and universities with $150,000 or
more in annual federal research expenditures, is a more systematic document from which
comparisons can be drawn. [See Chapter 2 for a discussion of federal research funding
trends at the study sites.] It should be noted, however, that NSF HERD Survey data does
not include sponsored funding received from non-federal sources. Despite their limited
utility, there are some comparable data in each institution’s academic year reports. Table
4.1 displays the total amount of external funding from all sources reported by each ERI
during the 10-year period beginning in 2003 and ending in 2012.
The data clearly show a fluctuation in total funding. While AU and MU had slightly increased totals between 2003 and 2012, IU actually experienced a significant and steady decline in total sponsored funding dollars. These totals are indicative of external funding’s overwhelmingly unpredictable nature. Changes in federal and state funding trends, legislative support, institutional changes in personnel (e.g. senior administrators, faculty, SPO staff) and a variety of other factors can all have an affect on an institution’s success in procuring external funding. I discussed some of these factors with the CROs and SPO staff at each study site to gain a deeper understanding of what may have influenced the fluctuations displayed in Table 4.1. Two subthemes emerged that help explain the evolution of external funding trends.
Appalachian University

Respondents at AU spoke about the positive effect federal earmarks had on sponsored funding totals. Dr. Park, however, also cautioned about the utility of trend line analyses at ERIs where even incremental increases in funding can cause large and often non-sustaining trend changes. In addition, respondents noted the need to increase competitive funding proposal submission.

The loss of federal earmarks. In discussing sponsored program activity trends during interviews at AU, the topic of congressional earmarks (respondents also used the terms *appropriations* and *pork*) allocated to these institutions on a non-competitive basis for research programs and service projects came up frequently. When speaking about funding changes, Dr. Park stated, “One of the things that probably changed the most is when I first arrived here, most of our federal funded programs were actually put through as Congressional appropriations targeted for special areas, special initiatives, and those have essentially evaporated.”

Barton talked about how earmarks significantly raised the annual sponsored funding totals between 2003 and 2007, noting that “our funding grew exponentially for a while there and then that kind of tapered off.” Hill provided specific detail: “So, we probably 8 to 10 years ago had around $10 million more than we have now, and that’s pretty much solely because of [earmarks].” Perhaps because of this occurrence, and perhaps because of the line of questioning about funding trends, Dr. Park made a point to express his view on funding trends at ERIs:

The other thing I think that's very, very difficult at an institution like ours is that trend line analysis and year-to-year improvements can be very difficult. When your research base is a million and a half, two million dollars, one large award in one year can do that tremendously. While it's nice to say, you know, we had a five
hundred percent increase in our research dollars this year over last, it's not anything that can be sustaining. I think as any statistician knows, when you're looking at small volume numbers, that can be typical at comprehensive institutions. You know, one or two major awards or one or two misses either way can have a huge impact on what your quote-unquote trend line analysis is for a year or for multiple years. So I think that there's some caution that has to be exercised when one looks at trends.

**Bolstering Competitive Funding.** While one cannot claim a causal relationship between the loss of federal earmarks and the intentional move to increase competitive external funding, a correlation is present. Speaking about funding trend changes at AU, Barton said, “We have definitely increased our competitive [submissions] over the last 5 years. I’d say tremendously. I mean, maybe not so much the bottom line, but the amount of proposals being sent in a competitive nature.” Hill confirmed this trend, noting, “I feel like we’ve seen an increase in true grants that faculty are doing for their own research purposes.” Dr. Park also addressed the notion of increasing competitive funding submissions when talking about historical trend changes at AU. He referenced the NSF Experimental Program to Stimulate Competitive Research (EPSCoR) and the National Institutes of Health (NIH)-funded Kentucky Biomedical Research Infrastructure Program (KBRIN) led by the University of Louisville as examples of programs that “have been very, very helpful in supporting some of our science faculty at least getting their foot in the door and the mentoring process that goes along with those programs.”

**Metropolitan University**

Respondents at MU also spoke about how federal earmarks raised their sponsored funding totals. In addition, respondents also noted that when earmarks ended, institutional leaders questioned the decline in external funding. MU was also the only university of the three studied that did not specifically mention the intentional move to bolster competitive
funding submissions. Instead, respondents relayed their frustration in getting more faculty to pursue grant funding.

The loss of federal earmarks. Collingsworth, who has been at MU since 2008, talked about the effect earmarks had on the institution’s external funding portfolio at the time, noting, “We had millions and millions of dollars in earmark money that was a part of our yearly awards funding, and those are no longer in existence.” Taylor emphasized that earmarks were “a blip a couple of years where we’ve had much more [funding] coming in . . . but other than that, the numbers have been fairly consistent.” This statement implies Taylor does not consider earmarks as true growth in the institution’s external funding base, and supports statements made by AU’s CRO about being cautious when analyzing funding trends at face value. In my conversation with Goetz about the history of funding trends, he spoke with trepidation about the aftereffects of earmarks, implying senior administrators questioned the drop in total external funding.

We had this really great windfall year that really was unsettling because we made so much. There was no way we were going to hit that high watermark again soon. So, we’ve been sort of in the aftermath of that higher watermark since then. Can we get back to that point? What happened? And a lot of it was change politically, like earmarks and things like that.

Bolstering competitive funding. While none of the respondents at MU specifically pointed to an increased emphasis on expanding competitive funding efforts, senior grants and contracts administrator Bradshaw did note a marked increase in the development of larger collaborative grant submissions. In speaking about funding trends, she stated, “We’ve had less submissions but larger amounts.” When I asked what might be contributing to this trend, she remarked,
We’re having more of the trans disciplinary proposals, so there are more people on one proposal for larger amounts versus people submitting them separately. That’s kind of what we’re seeing a little bit more of. I’ve noticed an increase in that even in just the past year. We’ve had some really, really big ones with 20 people on them. Kind of going for larger dollar amounts versus them submitting on their own.

In talking about competitive grants, senior grants and contracts administrator Robinson actually expressed frustration in getting faculty to become more engaged in grant seeking, noting, “The people that we do have come in—because it’s so competitive—they get discouraged, and they don’t really want to be wasting their time.” He said this attitude is more prevalent in social sciences and humanities faculty, recounting an instance when a sociology faculty member submitted an external grant, got denied, then “showed no interest in coming back and trying again.” This example illustrates the difficulties SPOs often face in attempting to grow their customer base, and by extension competitive submissions.

**Industrial University**

IU respondents also reported a marked increase in funding due to earmarks, but not to the same extent as the other two universities. In addition, respondents also spoke about a rise in competitive funding submissions and how statewide federally funded grant programs assisted with this success.

**The loss of federal earmarks.** Much like the other study sites, IU was not immune to the effects of losing federal earmarks. Sloan plainly stated, “I think that we took a dip in our grants, our activity, when a lot of the pork went away.” In speaking about the history of funding trends at IU, Sloan reflected on pre-recession research activity: “So, research was growing at that time. And of course, that was also during the nice bubble of grant activity and earmarks, certainly.” When I asked Porter for reasons
why IU’s total external dollars had declined, she attributed the trend to new leadership, the end of the American Recovery and Reinvestment Act of 2009 (ARRA) funding, and the termination of federal earmarks.

**Bolstering competitive funding.** While talking about funding trends, Porter made a point to express that IU’s sponsored programs funding is “back up to where [it was] a year before I got here.” She attributed this upward trend to “tremendous success in EPSCoR, KBRIN and things like that, which had now in some ways translated into more . . . federal grants. So, that kind of ladder for faculty has had some success.” Dr. Danvers reiterated this opinion:

I can tell you that over 20 faculty have benefitted from the [KBRIN] program in particular, and then if you also include the NSF EPSCoR program, which this year in particular we’ve really done well, I think those programs have definitely had kind of an amplifying effect.

In my conversation with Sloan, she pointed to an increased amount of proposal submissions as a recent trend and example of a rise in the pursuit of competitive funding. At the same time, she also spoke of the challenges the SPO faces in encouraging faculty to pursue external grants. “I think we have around 700 to 800 faculty, and I would say we have about 150-200 active principal investigators. So, that’s not much in my opinion. I feel like there’s a lot more out there.” When thinking about the reasons faculty may avoid grant seeking, Sloan pointed to tenure and promotion expectations as one reason, but also implied grant seekers at IU may lack fundamental skills in locating funding opportunities and developing strong proposals:

I think though that the other part is that people don’t really know what to do. They know that they maybe want grants or they know that they maybe have a project that they need resources for, but they don’t know how to go about doing it and they feel overwhelmed and it’s just a daunting task.
Research Development

The importance of research development activities not only to help clarify and facilitate the proposal submission process, but also to increase the quality and competitiveness of grant submissions emerged as a major theme at the ERIs under study. While larger, more research-intensive IHEs have in recent years begun to establish separate offices for research development, institutions such as ERIs rarely have the resources to create such structures. However, throughout my interviews at each study site, research development activities were often mentioned when discussing SPO services. In addition, CROs and SPO staff members at each site spoke at length about their plans to strengthen research development activities at their institutions with the goal of increasing proposal submissions and improving competitiveness. Research development logically fell into three subthemes that will be discussed below.

Appalachian University

With respect to research development activities at AU, they predominately fell under the responsibility of the associate director. While the director admitted this, and stated the need to increase SPO personnel to expand research development functions, budget limitations have hindered the ability to hire new staff members.

Internal grants and training. Each SPO operates an internal grant program designed to acclimate faculty to the grant writing process and help prepare them to submit external proposals. According to Hill, AU’s program typically has “between $70,000 and $80,000” per year to award, although she admitted the full amount does not always get awarded. When I asked why they do not expend all of their internal grant
funding, she enumerated two reasons, noting there are either too many submissions the deciding committee deems insufficient, or not enough applicants at all.

The SPO web site details three distinct internal programs: An award of $4,500 for new researchers in their first three years of a tenure-track position for the purposes of initiating a research program, an award of up to $3,000 for faculty in disciplines “where resource needs are modest and . . . opportunities for external funding are extremely limited,” and a large award of up to $10,000, which comes with the expectation that awardees target and submit a proposal to an external agency within a year after the internal grant’s completion. In addition, Hill spoke about a failed incentive program using internal grant funds.

We tried a grant proposal development program. I think we did it one year where faculty could choose an opportunity that they wanted to pursue and apply to be in the program, get a semester bought out, which was paid for by this internal funding grant, and spend that 20 percent or so of their time working on that grant proposal. And, that went ok, except that I feel like we kind of attracted the wrong faculty for that, because the faculty who are really going to be serious about doing grants are going to do it regardless, and the ones who decided to apply for that were the ones who wouldn’t have done it regardless, but were just after the release time. So, we actually eliminated that.

Training programs for faculty emerged as an important element when talking to the CRO and SPO staff about services the office provides. Dr. Park noted, “In terms of providing that customer service and support and training piece, I think right now that’s where we really want to establish excellence.” Hill talked about a proposal development course she created and implemented in a classroom-style setting. “Last year,” she stated, “we moved to just doing it in the fall, mostly because we lost a budget position.” She recently changed the course to a fully online, self-paced program. When I asked why this was done, she replied, “Faculty want it. That’s what we’re hearing.” She pointed to the
fact that enrollment for the course rose from “about 10-12” participants in a classroom setting to “up to 25” in the online format as evidence of faculty’s desire for a self-paced solution. However, she also noted 10-12 learners in a classroom setting was “a good, manageable group. This semester, if they all get really involved, they might overwhelm me.”

**Proposal support functions.** A critical component of research development is proposal support functions that go beyond the perfunctory regulatory review and submission of external applications. These types of services, which include budget creation, narrative proofreading, and other ancillary work related to compiling an external application, surfaced as pivotal to maintaining and growing the SPO customer base at the ERIs under study. When asked about services the office provides, Hill spoke at length about efforts to streamline internal forms for routing, conflicts of interest and budgeting, as well as providing detailed instructions on their website, doing “anything we can do to get more information in their hands.” Additionally, Hill talked about the faculty need for budget assistance, as “that seems to be the thing that faculty struggle with the most.”

Dr. Park spoke about additional proposal support functions outside of the SPO. When speaking about the administrative view of research, he mentioned a “model-mentoring program for new faculty” developed by an associate dean. This program, he stated, is instilling in new faculty the importance of developing one’s scholarship. In addition, he remarked about its effect on more seasoned faculty:

I think in a lot of ways it's even invigorated some of the senior faculty in the fact that they feel sort of a part and a responsibility for continuing on a tradition by mentoring new faculty coming in and by serving as role models. And so I think that's one thing that’s really been done at the college level that has worked very, very well and, we've toyed with the idea of expanding that, making it a part of all the colleges.
**Personnel.** During my interviews at AU, the lack of and desire for additional personnel dedicated to research development became apparent. Hill is the only staff member in the SPO working on research development and application processing activities. Dr. Park recognized this, stating, “In a perfect world, we would be able to have maybe one or two more folks on board who could provide more of that service role.” Barton was more succinct about the associate director’s workload: “I think she’s way overworked and would like to do something about that, and I need to.”

The other SPO staff mentioned both Hill’s importance to the office and the need to lessen her workload. Research compliance coordinator Linda Raines stated, “It all goes back to [the associate director] . . . I could tell you all day how awesome she is.” When the SPO office lost a position, Raines noted, the office worked to assume those responsibilities in order to lessen the burden for Hill. In talking about the office structure, Barton stated, “I think we could grow the place. If [the associate director] was doing nothing truly but development of competitive proposals and really being able to get out there and help these folks, I think we could.”

**Metropolitan University**

A small internal grants program and the lack of an SPO position solely dedicated to development marks research development efforts at MU. However, the new CRO has been making dedicated strides toward strengthening research development activities.

**Internal grants and training.** Of the three study sites, MU’s internal grants program is the least comprehensive. When asked about the internal grant program’s overall budget, Taylor stated, “We don’t have a specified annual budget for [internal grants]. We generally give out 2-3 per year at $3,000 each in the seven years that I’ve
been here.” In my interview with Robinson about the internal grants program, he noted all awardees must commit to submit an application to an external agency. Moreover, he stated the CRO had “thrown out the idea of offering more money for something like that to try and entice more faculty members to apply.” When talking about why so few faculty apply to the SPO’s internal grant program, Taylor stated,

One of the reasons for that is because there’s a lot of other money available for faculty. [such as] internal kind of grants on campus as well, different kinds of summer project grants they can do which are very fairly easy to get. But there are no restrictions on that. There are no requirements they actually have to [submit an external] proposal afterward either, and nobody follows up on any of that stuff.

When I pressed for more information about these other fund sources, Taylor elaborated,

It could be the faculty senate, or the individual colleges do it. There are a number of places that hand out that kind of money. And I think in many was that’s a detriment to people actually applying to external funding, because it’s so easy to get $5,000 or $10,000 for some little project that they want to do, and people seem to be satisfied with just that, and they can reapply year after year and keep getting it.

Like AU, MU also attempted to incentivize grant seeking by offering professional development funds to faculty who submitted an external proposal. According to Collingsworth, “We didn’t find that it made a whole lot of difference.”

With respect to training initiatives, comments from respondents revealed a hiatus in training activity over the past few years. According to Taylor, heavy staff workloads and a lack of faculty interest were key reasons the SPO put training programs on hold. Goetz stated,

We used to do a lot more. We had a person that was director of grants development and she really spearheaded lots of workshops . . . she left in summer 2013, and we didn’t really do much of it at all. We were just trying to keep our heads above water for the most part.
In reviewing MU SPO staff job descriptions, providing faculty training is not explicitly included as a job duty. However, Taylor also noted recently, “There seems to be more of an interest . . . in doing [research development].” Dr. Lawrence seems to be the catalyst for redoubling efforts on research development. When I asked Dr. Lawrence if the renewed focus on research development was her idea, she responded in the affirmative.

**Proposal support functions.** In speaking about the services MU’s SPO provides grant seekers, Goetz reflected on how in the past, a heavy workload affected his ability to provide proposal support functions during a time of high turnover in the office.

For a period, it was like we were so busy, and I was the only one doing a lot of stuff, and I did not have the opportunity to have someone always check my work and things like that. I did fine, but definitely more little typos in budgets and things like that as you were working through drafts.

Bradshaw also addressed the lack of research development activities at IU, noting, “It’s not been productive since I’ve been here, because the person who was doing it left right after I came . . . and we were just understaffed that whole time. So, it’s really a gap in services.”

Janice Matthews, a recently hired senior grants and contracts administrator, spoke excitedly about changes Dr. Lawrence had been making with regard to allowing SPO staff to better provide proposal support services, noting, “[The CRO is] trying to clear a path to open up more time for us to be more helpful in different ways to these researchers.” Elaborating on ways the SPO can be more helpful to faculty, Matthews continued, “That clears up more time for us to actually help them not necessarily write the proposal, but to really get in there and make sure what they are writing makes sense. More of an editing role, maybe.” Dr. Lawrence spoke frankly when asked to explain the rationale behind this change,
So, they weren’t doing what they should be doing, which is having time to actually look at the final draft of the grant to read it over and look for inconsistencies, typos, be another set of eyes. They didn’t have any time to be looking at alignment between the budget, the budget justification, and what was outlined in the grant, as what was going to be done . . . . they aren’t just monkeys sitting over there plugging things into a spreadsheet.

**Personnel.** MU’s SPO previously had a grant development position. When this person retired, those duties were “blended . . . back into three grant administrators,” according to Taylor. However, my interviews with SPO staff suggested that development activities were not occurring at all due to heavy workloads and faculty disinterest. Dr. Lawrence had recently assigned research development duties to Bradshaw, and she spoke about the change during our interview.

I’m kind of in a dual role now . . . working on some grant proposal submissions, but I’m also doing more development stuff. So . . . she wants to have more streamlined processes, more things electronic, more workshops. So, I’m trying to kind of pick up her requests and run with them at this point.

Additionally, Dr. Lawrence spoke of her intentions to hire a “grant development specialist who would be that person out working with the faculty more intensively one-on-one to help them develop ideas and match those ideas with opportunities.”

**Industrial University**

Research development activities at IU were the most sophisticated of the three institutions studied. Like AU, the majority of these duties fell to the associate director.

**Internal grants and training.** Throughout the data collection and analysis process, a positive correlation between the institution’s level of federal research funding and the robustness of its internal grants program emerged. IU has the highest amount of federal research dollars, and its internal grants program is quite expansive. In my conversation with Sloan, who has responsibility for developing and implementing the
program, she spoke about its importance in both providing grant management experience and increasing external proposal competitiveness.

Our internal grant programs are obviously a huge boost to getting people started on their research, getting some preliminary data [and] giving them experience so that grant writing doesn’t seem so intimidating. We certainly take our internal grant programs very seriously. They are like real external grants. We call them grants with training wheels, so folks can really get used to not only applying for [grants], but managing a grant.

IU’s budget for internal grants is by far the largest of the three ERIIs at $210,000 annually. The program is divided into two categories: A $16,000 award with the requirement that recipients submit an application for external funding, and an $8,000 award with no external submission requirement. However, Sloan noted recipients of this smaller award must produce a publication, “or an exhibition or a performance . . . it has to lead to something, just not necessarily an external submission.” The program receives about 70 applications annually, with 35 to 40 awards each year. Sloan spoke proudly about the program’s success: “We have an incredible return on investment. Over 200 percent in terms of dollars with our external awards that have come off of the investment of the initial [internal grant].” Sloan also shared details of a new internal grant program yet to be implemented, created to help prepare faculty to compete for IU’s competitive main internal grant program. This program, she explained, “Is more like an education program . . . but at the end of it all you get a little $2,000 grant to implement, to put all that you’ve learned into practice.”

Much like the other institutions, IU attempted to incentivize faculty to submit external applications by offering professional development money to faculty who submitted proposals. According to Sloan, the program “had a sliding scale of money . . . based on the amount of your proposal.” Just like the incentivizing attempts made at AU
and MU, this program did not yield positive results. “I think the people who realized what it was and took advantage of it certainly, it incentivized them, but not in the positive way that it was intended to,” Sloan said. “So of course, that program ended.”

With respect to training programs, Sloan spoke extensively about a new program created last year. A draft document for the program states that it is designed to “create a tailored ascension plan . . . for advancing an individual’s, or a research-themed cohort’s, research/scholarly agenda.” Sloan called it a “wraparound approach to developing research agendas and getting a guide in place for applying for external grants.” When pressed for more information about this program, she elaborated,

You’re increasing your knowledge . . . . You know, moving to state funding, moving to federal support. So, the first objective is just figuring out where an individual sits on the spectrum of grant knowledge, or where they’re fitting in their research. Are they starting? Are they mid-career? Are they at the end of their career? Are they switching gears? You know, what kind of success have you already had? Where are you in your just activity in terms of grants? And then developing, you know, a plan. What should you do to even just get on the board, to get your knowledge increased?

Proposal support functions. IU SPO staff spoke at length about the proposal support functions they provide. Grants coordinator Kylie Morris stated, “We definitely go through and try to find ways to strengthen their proposal. More than just grammatical review.” Additionally, while she admitted SPO staff cannot provide scientific technical expertise, their “experience with the sponsors can really help strengthen [faculty] proposals.” Sloan corroborated this statement, explaining, “We will edit, not only for making sure the proposal is addressing the needs of the RFP and the agency, but we’re proofreading, and saying this sentence doesn’t make sense. Really spending time on each single proposal.”
Similar to AU, IU’s academic hierarchal structure includes associate deans who provide additional proposal development services outside of the SPO. Porter spoke about one associate dean in particular who reviews faculty proposals before signing off on them and provides technical expertise. The director explained,

We can review it for all the guidelines and things, but we can’t review a chemistry proposal [for content] and she can. And if she doesn’t know it, she then triages it, sends it to somebody else and says, “Hey, this is your area, will you please look this over for me?” [We] have [faculty] who speak English as a second language, things like that. We can look at that part of it, the construction of a sentence, but not the content. So she’s been a tremendous help.

**Personnel.** Evidence of the SPO emphasis on research development activities is found in the associate director’s job description, which states the position “is primarily responsible for directing a program of comprehensive and holistic training and technical support to faculty to develop their scholarly, research and creative endeavors.” In my interview with Sloan, she spoke about the growth in pre-award staff, noting, “When I started [in 1998] there was one person. Now we have three.” Additionally, in talking about the evolution of the SPO structure, Porter stated, “I have a position open now, and that’s going to be a proposal development person. Because that’s where the need is.”

**Effects of Budget Cuts**

The effects of budget cuts on SPOs were an important theme of the study. These cuts have affected the work of the selected Kentucky ERI SPOs both directly and indirectly. During my interviews, respondents spoke earnestly and extensively about these effects.

**Appalachian University**

During my interview with Barton, he spoke about the loss of an office position, stating, “Because of the downturn in 2008, we had 5 [people] but then an employee
retired and we weren’t allowed to replace that person.” This position, according to Dr. Park, was “a budget specialist to help faculty with their budget submissions at proposal time.” When talking about the effect the loss of this position had on the SPO, Barton noted,

I think that people have taken on some more than what I maybe would like them to, but until we are able to farm off some of that to maybe another person or instruct someone else to do another piece, that’s kind of where we’re at.

Another direct effect of institutional budget cuts has been a shrinking of the unit’s budget. With respect to professional development, Hill stated, “If all of us wanted to go to a conference every year, we wouldn’t have enough money to send us all.” Additionally, Dr. Park noted support for internal grant programs has been cut over the past several years.

Dr. Park also spoke about unfilled vacancies in the sponsored programs accounting office as an indirect effect of budget cuts. “For a time there,” he said, “we were back down to one staff, one and a half staff support people, and that certainly hurt us in terms of the services we’re able to provide.” Barton mentioned increased competition for external funding as a negative effect of budget cuts, and how it sometimes serves as a deterrent to faculty interested in pursuing external funding: “They see [the increased competition] and go, well, why would I want to go after that? It’s going to be even harder than it was before.”

Metropolitan University

MU SPO staff also expressed perceptions of how institutional budget cuts have negatively affected the office. Collingsworth spoke candidly about these effects.

We get no raises . . . we’re understaffed. [Senior administrators said] sorry, we’re too poor. We’ve been cut here, we’ve been cut there. [Senior administrators told
us] you’ve got great benefits, so be happy. We’re not going to give you anymore money, but we are going to require you to do more, and to be more educated, and be knowledgeable and unbelievable in a lot of different areas with a lot of different computer programs and whatnot. If we went out into a different world . . . we’d probably be paid twice as much. So those expectations are there.

Collingsworth also stated that the SPO office “has trouble keeping good people.” When I asked her why, she pointed to the lack of raises and the institution’s proximity to other IHEs and private companies that “have paid them more money, or recruited them out of here.” As a result, she explained, “we feel like we’re perpetually training somebody.”

Goetz provided an example of this issue, noting in 2013, two of his counterparts left the institution. “That summer,” he said, “I did almost everything. It was really overwhelming.” When MU eventually hired two new grant administrators, Goetz had to train them on the job. As he explained, “It wasn’t a lot of relief right away.” It should be noted that since I conducted the MU interviews, two grant administrators resigned.

The SPO staff also spoke about the lack of raises for several years and its effect on morale. “It’s had a serious trickle-down effect in terms of just morale, happiness, job satisfaction, just day-to-day [duties],” Goetz revealed. “There’s a lot of cynicism going on right now,” he admitted. “I’m being really candid about this.” Robinson spoke about the cumulative effects of low morale, noting “It just injects a lot of uncertainty into, you know, if people want to stay with the university or not.” When I asked him if this statement was in reference to the SPO specifically, he replied, “Yeah. Well, I mean campus wide, but in our office as well.”

**Industrial University**

Much like the other two institutions, IU’s SPO staff spoke about the inability to hire needed positions as a major effect of budget cuts to the university. Sloan mentioned
the possibility of not being able to fill an open position: “We were going to do another
grants coordinator . . . but we don’t have the money for it.” Additionally, Porter
explained how institutional budget cuts have affected the ability of SPO staff to travel for
professional development purposes. “We don’t have a lot of money for travel. We
haven’t traveled this year,” she stated.

Wiles commented on the inability to travel, noting, “[It] is kind of sad, but we’ve
tried to recover by at least taking advantage of any webinars we can to do anything
locally.” When I asked senior grants coordinator Monica Adler if she found online
professional development as effective as in-person conference sessions, she replied,
“Some people do well with webinars, other people not always so good, because it’s hard
to stay focused on a TV for a long time.” In addition to travel, Sloan explained funding
for the SPO’s internal grant program was cut by $65,000.

The CRO and SPO staff also mentioned the lack of raises as a source of
dissatisfaction among not only their unit, but also among faculty. “We haven’t had a raise
in seven years, and I think that affects morale,” Adler said. “I think when people don’t
get raises, they’re less inclined to want to do more, and I think that’s another thing we’ve
seen with our faculty. If they don’t get raises, why should they put themselves with more
work?” Dr. Danvers agreed a lack of raises between both staff and faculty has been “the
biggest impact . . . that has affected morale.” Regardless, she also admitted: “As I
compare us to other institutions in the state, across the country, I think it probably hit us
to a lesser extent. But it’s definitely there.”
Regulatory Changes

In 2014, the Office of Management and Budget (OMB) implemented a new guidance for federally funded research and sponsored programs. This compendium, officially titled the *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (also referred to as the *Uniform Guidance*), combines previously separate regulatory guides into one all-encompassing document. Throughout the planning, feedback and implementation process of the Uniform Guidance, the Society of Research Administrators International and NCURA—the two principal professional development associations for the field of research administration—provided frequent updates, special articles, and numerous webcasts dedicated to the potentially transformative effect this change may have on institutional policies and procedures for managing externally funded research.

Given the intense focus on the uniform guidance among research administration professionals, an important objective of this study was to understand how its implementation affected the work of SPO staff at the selected sites. Interestingly, my interviews with CROs and SPO staff revealed challenges related to the Uniform Guidance were minimal at best. Details about the effects of these regulatory changes on the work of the selected SPOs are presented below.

**Appalachian University**

When asked if the implementation of the Uniform Guidance has created additional burdens for the SPO, Dr. Park replied, “So far, probably not. I mean, a lot of the things under the Uniform Guidance haven’t changed all that much.” Hill concurred, stating, “I feel like honestly it didn’t change a whole lot of our procedures . . . most of the
rules and things are even a little bit more lenient than what we were enforcing before.” In fact, comments from SPO staff implied the implementation of these regulations might actually increase productivity. Of the three study sites, AU is the only institution where the procurement process for services and equipment funded by external dollars is handled by the SPO and not the institution’s purchasing or procurement office. Dr. Park spoke about this potential change,

Probably the one thing that will change the most . . . is going to be the procurement regulations. Basically having to verify that you've done due diligence in getting costs, done some cost analysis on all these subcontracts, sub awards, vendor agreements that we typically been doing. We've been using a $25,000 threshold. Now as that goes down to $5,000, then you have to do some due diligence. You know, we're going to have to basically transfer a lot of the functions that we've been doing in the sponsored programs office on to the procurement office itself. And so, we're working through that, and we've had several meetings and we think we have a plan for going forward.

Metropolitan University

MU SPO staff also indicated the Uniform Guidance did not adversely affect their daily work. Bradshaw stated, “It’s not been a huge effect so far. I mean, we’re obviously aware of it and reference it.” Goetz had the same opinion, admitting the SPO has “honestly been kind of slow to pick it up.” Taylor had a similar opinion, noting the new guidance hasn’t had much of an effect on their work. When asked why he thought the changes had a minimal effect on SPO work, he elaborated,

I think one reason it hasn’t had a gigantic impact to date is I think a lot of the same rules and regulations are basically in place, it’s just in a different part for the federal government now. They’ve just moved it all and renumbered everything but a lot of the rules are still the same.

When I theorized that perhaps larger, more research-intensive IHEs might have to make more significant changes in lieu of the Uniform Guidance, Taylor concurred,
Well, that’s probably true, you know, I think there’s some differences in the [regulations] and stuff like that. The language doesn’t affect the kind of programs we’re actually doing . . . But again, we’re not going to have the same policies written up that MIT has. We’re in a whole different circumstance with that.

**Industrial University**

IU’s SPO assistant director Rhonda Anderson summarized the prevailing opinion about the effect the Uniform Guidance has had on their work.

I think it’s much ado about nothing. I don’t know that there was that much substance to it. To me it just seemed like a lot of it is common sense. I think the goal of putting it all in one place, it was a nice idea, but in my mind all it is, is a different set of bookmarks.

Further, Anderson said the implementation “wasn’t a sweeping change like I think people were afraid it would be.” Porter, in talking about the scant effect these new regulatory rules had on the SPO, looked back upon the initial work they did in an attempt to prepare for the changes:

Well, we got all excited like everybody else, and I called everybody together, HR, and procurement . . . because I saw all these schools doing it, and we’ll take the lead, and we’ll put up a website. And we did. We did all that. I actually think it’s much ado about nothing when I look back on it.

While Porter did concede that the regulatory changes have required a more rigorous process for monitoring the recipients of IU sub awards coming from sponsored projects, she tempered this admission by stating, “We’ve never really had issues with [sub awards]. We don’t have that many [sub awards]. Ok. So, there’s a little more work.”

**Summary**

This chapter presented the findings of this exploratory, multiple-case study framed by the study’s two guiding questions and organized in six major themes. Key discoveries emerging from the data include perceptions of a senior-level administrative disconnect related to conducting sponsored research, the establishment of a strategic research focus
and targeted approaches to support it, and external funding trends punctuated by the loss of congressional earmarks and a shift toward bolstering competitive proposal submissions.

Additionally, research development activities emerged as a critical strategy to supporting the ERI research enterprise, and institutional budget cuts were found to have a detrimental effect on SPO growth and professional development. Finally, expansive federal regulatory changes were found to have a minimal effect at best on further complicating the work of research administrators. Chapter 5 offers a discussion of the findings and implications for practice, in addition to providing directions for future research.
CHAPTER 5
DISCUSSION AND CONCLUSIONS

Despite facing numerous obstacles, smaller state-supported institutions of higher education (IHEs) have worked strategically to position their universities as emerging research institutions (ERIs) and become more competitive in securing external funds as a response to shrinking budgets (Altbach, 2011; Brewer et al., 2009; Dehn, 2010; Dundar & Lewis, 1998; Kiley, 2012; Kuh et al., 2007). While the research enterprise involves many institutional stakeholders, there is a dearth of research focused on the sponsored programs offices (SPOs) that serve as essential structures for enhancing the capacity of universities to secure externally sponsored funding (Bailey, 2011; Carr, McNicholas, & Miller, 2009; Hamilton, 2010; Kane, 1999; Montoro, 2010; Muhammad, 1996; Waite, 2012; Wetherholt, 2013). Given the escalation in IHE competition for federally financed funding (Britt, 2012), this exploratory study has the potential of making a significant and timely contribution to the existing knowledge base on how ERIs may adapt to a decline in state appropriations and understand how research administrators reconfigure organizational structures and their roles to facilitate adaptation.

This exploratory case study aimed to understand the perspectives of SPO staff members and chief research officers (CRO) about environmental changes affecting the research enterprise at their respective institutions. Short pre-surveys were sent to all study participants prior to interviews to gather background data about participants’ education, prior work experience, and years of service at both the institution as well as in their current role. Individual in-depth interviews were then conducted with both the CROs and SPO staff members at each site to gather their perceptions about changes in their research
support structures. In addition, documents related to the institutional research enterprise (e.g., organizational charts, job descriptions, institutional policies and regulations, office web pages, annual reports of grant and contract activity) were analyzed to provide additional information about the phenomenon and to produce data to triangulate with interview data.

The research questions guiding this study are as follows:

1. In what ways has the decline in state appropriations to selected Emerging Research Institutions in Kentucky influenced the work of their sponsored programs offices?
2. How have changes within sponsored programs offices at selected Emerging Research Institutions in Kentucky affected the procurement of external research funding?

These questions provided a guiding framework in discovering how the selected ERI SPOs have adapted to changes. Throughout the data collection and analysis processes, several themes emerged that help explain the environmental changes and challenges these selected sites face and how organizational adaptation may have contributed to a rise in federally financed sponsored funding.

This chapter begins with a broad examination of the study findings using a systems theory perspective in order to provide an understanding of how these organizations adapted to changes in the environment. Next, the study’s key findings are presented across these six overarching themes: (a) administrative disconnect, (b) strategic focus and targeted approach, (c) external funding trends, (d) research development, (e) effects of budget cuts, and (f) regulatory changes. Analyses are organized by themes and
related subthemes. Summaries of relevant case study data are briefly summarized for
each theme as a cross-case synthesis (Yin, 2009) to formulate general conclusions that
are then discussed using pertinent literature and relevant theories. This approach allows
for the construction of a rich, detailed picture of the phenomenon (Hatch, 2002). Finally,
a discussion of implications for practice and future research directions are presented.

**Systems Thinking Perspective**

The notion of systems thinking underscores the dynamical relationship between
the external environment and adaptive changes in the nature and structure of
organizations. As changes take place in the external environment, organizations must
adapt to survive and identify new opportunities in which it may thrive (Chance & Björk,
2006). Systems theory provides a basis for understanding how organizations may adapt to
environmental changes, and thus it is useful in explaining how the selected ERIs adapted
to declining state appropriations in order to acquire new resources. Through efforts to
build research infrastructures to compete for external funding, the three ERIs responded
to a decline in state appropriations (i.e. base funding) by expanding efforts to secure
external funding. To accomplish this, these ERIs both reorganized and expanded their
respective SPOs.

Data gathered from this study suggest that institutional leaders at the ERIs studied
viewed the acquisition of external funding (i.e. input) as an important reason for
expanding research productivity and by extension, SPOs. To achieve this expansion, the
ERIs made several internal changes. First, they developed new and modified existing
internal policies regulating research activity in order to achieve proper compliance with
federal regulations. These institutions also provided SPOs with financial resources to
facilitate the hiring of additional staff to deliver research development services aimed at increasing external funding competitiveness. Finally, the three ERIs studied worked to expand their respective research enterprises by developing strategic research foci that capitalized on their institutional strengths.

However, these ERIs faced challenges in expanding the role of SPOs. Increasing the organizational complexity of research structures caused dissonance between institutional leaders and SPO staff members about the roles and responsibilities. The moratorium on federal earmarks in 2010 caused an across-the-board decline in federal research funding, while continued cuts to institutional budgets affected the ability of SPOs to engage in professional development opportunities.

Despite fiscal and regulatory changes in the external environment that threatened institutional vitality, these three ERIs have been able to adapt by making structural and policy changes designed to expand external research funding. Although their response has been hampered by some internal challenges, these institutions have continued to adapt by investing scarce resources in their respective SPOs. With respect to funding, the ongoing dynamic relationship between the external environment and the selected ERIs underscores the importance of their remaining open to input from the external environmental, using information to make strategic structural changes, and also using feedback on the effectiveness of these modifications to inform continuous change processes (Katz & Kahn, 1966).

**Administrative Disconnect**

The most prevailing theme that emerged from the data is a perception among CROs and SPO staff members of an administrative disconnect with respect to the realities
of conducting sponsored programs at the selected ERIs. Specifically, respondents referred
to academic department chairs and deans as well as cabinet-level administrators including
vice presidents and provosts, and the university president. For example the CRO at AU summarized this persistent theme when stating, “I think we have to do a better job educating our higher administration folks in terms of what sponsored programs can and cannot do.” It captures a sense of reality among those who provide the day-to-day support for submitting external funding proposals and managing awards that there is dissonance between what administrators say about the importance of receiving external funding for research on the one hand and their providing adequate support for sponsored programs in terms of resources, organizational structures, and institutional policies on the other hand.

This sense of dissonance emerged as participants reported a general lack of institutional prioritization and support for research apparent in organizational structures. For example, in many instances responsibility for research was combined with a wide array of other disparate institutional units and management operations of research foundations. Study participants viewed these circumstances as both ineffectual and wasteful. In addition, policies at each ERI placed little to no emphasis on the acquisition of external funding as a criterion for faculty tenure and promotion decisions.

Although the primary function of these ERI institutions is to serve as teaching universities, participants agreed that administrators failed to comprehend two critical points. First, they did not understand the limitations of the SPO in growing research on their respective campuses without instituting policies for faculty that provide incentives for them to actively pursue and secure external funding. Second, senior administrators did
not understand inherent limitations placed on grant and contract revenue as a source of unrestricted institutional funding.

Another theme emerging from study findings is that SPO staff members generally reported a tendency for administrators to push both faculty and SPOs to increase external funding activity without providing financial or personnel resources to support this directive. A key finding related to increasing staff productivity was an emphasis on electronic research administration (ERA) systems across all institutions. For example, neither AU nor MU, have these systems in place, and SPO staff members reported that not having them had a detrimental affect on productivity. In addition, participants at IU, an institution that has had an ERA system for some time, commented that it had a positive effect on SPO productivity. Further, it should also be noted the SPO at IU implemented their own ERA system without administrative support or resources.

The theme of administrative disconnect (or dissonance) with regard to an institution’s research enterprise that emerged from the study appears consistent with other research. The prevalence of self-interested organizational silos within IHEs may exhibit internal goals of organizational subunits that may only be loosely coupled with broader institutional ones (Keeling, Underhile, & Wall, 2007; Kuh, 1996). Further, Lowry (2011) offers an explanation of the difference between institutional and organizational subunit goals of SPOs. She observed a distinct difference in culture among senior leaders and SPO administrators with regard to research and asserts that “when there are institutional priorities to grow the research enterprise . . . . the different cultures’ expectations, needs, and priorities are not always well understood by each other” (p. 10).
Additionally, Edwards (2010) found that placing more emphasis on external funding in tenure and promotion policies at ERIs was important to expanding the amount of research conducted by faculty. However, Hamilton (2010) notes that many chief academic officers at these institutions failed to understand the relationship between teaching and research. Consequently, the lack of organizational progress of ERIs in expanding the acquisition of external support may be explained by both organizational cultural differences between institutional and organizational subunit leaders and the pervasive influence of the primary mission of ERIs as teaching institutions. These circumstances appeared to fundamentally challenge the ERIs studied and may also offer an explanation as to their respective progress.

**Strategic Focus and Targeted Approach**

Although study findings suggest that administrators were somewhat disconnected with regard to institutionalizing sponsored programs, data also indicate the ERIs have moved toward establishing strategic research foci to better situate themselves to procure external funding. To support these new foci, the ERIs crafted and instituted targeted approaches designed to expand external funding. Although this concept appears to contradict findings regarding administrator disconnect, data from this study also suggests that these perceptions of dissonance held by CROs and SPO staff members may have been influenced by inadequate communication patterns and misunderstanding among administrators at several levels regarding the role of ERIs as teaching institutions and their emerging role in securing external research support.

SPO staff members at the three universities studied all noted the lack of a cohesive institutional strategic focus for research. Establishing a strategic focus was a
response to changes emanating from both external organizational entities and from within the SPO. All three institutions studied developed research priorities as a way to focus energy and resources to pursue external funding opportunities and acquire resources that may have an institutional impact. From a procedural standpoint, the SPOs in all three ERIs reported varying degrees of effort toward policy creation and modification as a way to streamline pre-award processes and to ensure proper compliance with federal regulations.

In addition, staff members at each site pointed to a variety of resources invested in the research enterprise. For example, all three institutions invested new financial resources toward establishing and promoting internal grant opportunities designed to support and cultivate faculty research. It was also evident that all three institutions made an intentional effort to attract and hire faculty who were research oriented, particularly in natural science disciplines. Administrators at both AU and IU indicated that economic circumstances accompanying the economic recession in the USA beginning in 2007 was a factor in expanding their respective institutions’ ability to hire additional research-oriented faculty.

Finally, SPO growth and change at each institution suggests their taking strategic efforts toward developing their respective research enterprises. For AU and MU, this growth was directed primarily towards (a) meeting compliance requirements necessary for managing external funds and (b) hiring key research administration personnel to accomplish these ends. With regard to the latter, in 2005 AU created a new position of associate vice president for research; MU created a new position of vice provost for graduate education, research and outreach in 2015. In terms of personnel growth, the SPO
at AU increased from two employees in 2000 to five employees in 2005. At MU, the SPO has gained two additional positions since 2003, with one line attributed to the need to address external funding compliance deficiencies. At IU, however, SPO growth has been driven mainly by an internal desire to become more research oriented, evidenced by the numerous changes and growth in the research organizational structure that has taken place since 2003. Although SPO staff members at IU noted varying levels of success for each structural change, taken together the actions indicate a deliberate effort toward expanding the research enterprise.

The ERI designation was created in part to recognize the need for such institutions to grow their research capacity and classify their efforts among institutional types (Garcia et al., 2009). An administrative focus on expanding the acquisition of external research funding through strategic and targeted investments is discussed by Björk (1983) who found administrators at IHEs that were seeking to become more research intensive acknowledged the necessity of “providing additional resources either in time or dollars” (p. 35). More recently, the work of Conn and colleagues (2005) not only affirms this overarching idea but also expands understanding of this concept. They assert the importance of attending to several additional elements integral to success in creating effective organizational units and institutional research cultures such as (a) policy development, (b) strategic hires, (c) financial investment, and (d) organizational restructuring. Findings by Edwards (2010) also affirm the notion that a strong research culture is a hallmark of larger, more research-oriented universities, suggesting that these study findings are consistent with a general trend for ERIs to increase sponsored activity as a response to fiscal austerity.
External Funding Trends

Analysis of total external funding for each ERI included in the study and by fiscal years (2003-2012) indicate some fluctuation in overall totals as well as slight increases for AU and MU, and a significant decrease for IU. However, an examination of the National Science Foundation (NSF) Higher Education Research and Development Survey (HERD) data on federally financed research expenditures during this same time period shows significant increases for each institution. Data collected through interviews with staff at each ERI helped explain discrepancies between institution and NSF HERD reported data with regard to both fluctuations and increases in receipt of federal funding for research. One emerging theme consistent across the ERIs studied was the loss of federal earmarks (e.g., congressionally appropriated funding) for research projects in 2010 that caused a decline in external funding totals. For example, the CRO at AU succinctly summarizes the viewpoints obtained through interviews with administrators and staff at all three ERIs: “One of the things that probably changed the most is when I first arrived here most of our federal funded programs were actually put through as Congressional appropriations targeted for special areas, special initiatives, and those have essentially evaporated.”

During the years between 2003 and 2012, AU and IU reported an increase in the number of competitive proposals submitted by faculty. A closer examination of these data indicated that the increase was largely attributed to their participation in statewide federal grant programs funded through the NSF Experimental Program to Stimulate Competitive Research (EPSCoR) program and the NIH Institutional Development Award (IDeA) Networks of Biomedical Research Excellence (INBRE) program. Both were
designed to increase the research capacity and competitiveness of ERIs. Although SPO staff members at MU noted an increase in large-scale, trans-disciplinary proposal submissions, they did not differentiate proposals submitted to the aforementioned federal programs. In fact, the dominant sentiment expressed by SPO staff members at MU about faculty attitudes toward grant seeking was one of frustration that may be attributed to an increasingly competitive funding environment.

Prior to a formal moratorium on Congressional earmarks in 2010 (Leven, 2011), the Commonwealth of Kentucky ranked second behind Texas in earmarks for 2008, receiving $165 million (Brainard & Hermes, 2008). Because ERIs tend to have fewer resources than their larger, research-intensive counterparts (Johnstone, 2011), the loss of federal earmarks was a significant occurrence among the three ERIs studied, the effect of which was compounded by a 27% inflation adjusted decline in base budget appropriations to these state-supported IHEs between 2008 and 2016 (Kentucky Center for Economic Policy [KCEP], 2014). Despite a decline in state appropriations, NSF HERD data on federally financed research expenditures show large increases in federally funded science, technology, engineering and mathematics (STEM) related research during the ten year period from 2003 through 2012. These data correspond to reports of their success in NSF EPSCoR and NIH INBRE (NSF, 2013a).

The ERIs examined in this study initially leveraged NSF EPSCoR and NIH INBRE funding to create research support units to enhance their competition for federal funding and maintain institutional vitality (Bess & Dee, 2008). Data affirm that these three ERIs not only developed more robust internal organizational structures to support faculty pursuit of federal funds but also viewed their efforts as an integral part of
sustaining the well-being and vitality of their respective institutions. In addition, the loss of federal earmarks stimulated ERIs to make the decision to become more strategic in the pursuit of external funding.

**Research Development**

Research development emerged as a critical theme in the study and appears to undergird institutional efforts to strengthen their capacity to secure external funding. Research development activities (e.g., internal grant and training programs, proposal support functions, and allocating personnel to managing these tasks) have been present to some degree at all three ERIs. However, data indicate a recent and intentional push to bolster research development activities across institutions that share the goal of increasing external funding proposals and awards.

Although each ERI funds and manages internal grant programs and conducts faculty training related to grantsmanship, they varied in breadth and depth. For example, SPOs with larger budgets and more comprehensive training programs also received higher levels of awards from federally funded sources. Although MU had a less robust internal grant support program in comparison to the other ERIs, the SPO director believed research development lagged because faculty were able to secure internal funding support from other units on campus.

Despite various forms of internal financial incentives, all three ERIs were unable to motivate faculty to submit external grants. For instance, comments by the SPO associate director at IU on the effectiveness of this strategy summarize the thinking of staff at all three institutions: “I think the people who realized what it was and took
advantage of it certainly, it incentivized them, but not in the positive way that it was intended to.”

Similarly, all three ERIs reported the critical nature of proposal support functions such as narrative proofreading and budget development in maintaining and expanding the number of faculty submitting proposals for external funding. All ERIs expressed the need for additional staff dedicated to managing research development. However, all were faced with budget restrictions that limited their ability to hire new staff. Although AU and IU had at least one person primarily focused on research development activities, MU only recently accomplished this by modifying an existing position after the person responsible for research development retired in 2013.

Scholars acknowledge the importance and expansion of research development support activities as a part of ERI research administration functions (Conn et al., 2005; Edwards, 2010; Mason & Learned, 2006; National Organization of Research Development Professionals, 2014). For example, Edwards found internal grant programs “critical to fostering a culture of grantsmanship and scholarship” (p. 95), and Conn and colleagues documented the success of pre-award activities in enhancing research productivity. The basis for enhancing institutional research capacity is described by Mason & Learned as a response to poor economic conditions and declining levels of institutional support; they note however that these circumstances often placed a burden on the SPO to assist institutions in securing external resources. In order to ensure success, Mason & Learned persuasively argue that an expanded role for SPOs should commensurately include “new positions within the existing office to offer various support services required in the [research] development process” (p. 28).
Effects of Budget Cuts

A decline in state allocations to the selected ERIs affected the SPOs in several ways. Although no employees lost their positions, budget cuts did result in staff losses through attrition. For example, AU and MU were unable to replace individuals who retired or otherwise left the university and who were critical to the functioning of these research support units. Data gathered through this study suggest that personnel losses created a greater difficulty in providing services to faculty. With respect to professional development opportunities, both AU and IU noted that state-level budget cuts had limited or all together eliminated their ability to travel to conferences and other continuing educational opportunities.

A reoccurring theme that emerged when interviewing study participants was the low morale among SPO staff members caused by budget cuts. Low morale was exhibited in several ways. For example, at AU one staff member indicated that budget cuts created a sense of anxiety about her job security. For personnel at MU and IU, the feeling of low morale was an outgrowth of no salary raises during the past several years. At MU in particular, stagnant salaries among SPO staff members contributed toward “cynicism,” according to one participant. Additionally, while the SPO at MU was able to add personnel, budget cuts restricted the ability to maintain competitive salaries. Study participants at MU also reported a significant level of staff turnover due to the institution’s proximity to a large metropolitan area in a contiguous state where other institutions and companies “have paid them more money or recruited them out of here.”

Scholars have studied employee morale in a wide array of organizational contexts but have only in the past few decades focused their attention on those working in IHEs
(Treuter, 1993); however, most studies focused on faculty rather than administrators. Although the foci of research related to faculty morale varies considerably, findings about the effect of salary levels on morale concur that lower salaries correlate with low morale and low job satisfaction (AbdulCader & Anthony, 2015; Gardner; Blackstone; McCoy; Veliz, 2014). Previous studies by Kerlin and Dunlap (1993) on faculty morale during periods of fiscal austerity report that faculty became “increasingly discontent with their jobs and their employing institutions” (p. 350). Although these findings suggest a link between budget declines, low salaries, and low faculty morale, they underscore the need for research focused on academic staff, morale, and job satisfaction. There is considerable consensus among scholars about the importance of studying research administrator morale in these contexts and understanding occupational stress (Katsapis, 2008; Shambrook, 2010; Shambrook & Mintzer, 2007).

For the three ERIs included in the study, low job morale, occupational stress, and uncertain future job opportunities in research administration may have significant long-term consequences. These circumstances are dramatically different than the national positive job outlook for research administration (NCURA, 2015; SRA, 2015), which have led scholars and higher education administrators to call for an educated administrative workforce knowledgeable of the diverse duties and rapidly expanding regulatory requirements inherent in conducting research. To help address this situation, many colleges and universities initiated master-degree programs in research administration. For example, the University of Florida, the second largest university in the USA received a grant from the National Council of University Research Administrators to rollout an online graduate program (Smith & Torres, 2011). Several other colleges, including
Emmanuel College in Boston and Rush University in Chicago, offer similar graduate level programs focused on research administration. Recently, however, Shambrook & Roberts (2011) reported that nearly 70 percent of all research administrators responding to their survey were 40 years of age or older, portending a mass exodus from the profession in the coming decades. These findings suggest the need for ERIs to anticipate normative staff attrition by creating institutional conditions to attract qualified and knowledgeable candidates as well as retain and enhance the capacity of staff through professional development programs.

At this juncture, the ERIs participating in the study have experienced persistent declines in state appropriations and thus found it challenging to maintain a cadre of highly qualified and experienced research administration staff. This has limited the growth of research administration staffs and consequently limited institutional capacity to acquire external resources through increasing grant activities. In particular, it heightens the critical importance of professional development and the negative long-term consequences of budget cuts among the ERIs studied.

Regulatory Changes

When the Office of Management and Budget (OMB) first proposed changes to federal grant regulations in February 2013, the field’s two major professional development organizations focused on the potential changes and ramifications these changes would have on IHEs. This may have in part contributed to the general front-end anxiety and planning that took place at universities across the country. For example, the SPO director at IU implied this when talking about the uniform guidance directive: “Well, we got all excited like everybody else.” Although some may view recent changes
in federal regulations embodied in the uniform guidance (2014) as complicating the nature and direction of research administrators’ work, this has not been the case. A general consensus among ERI study participants was that new federal guidelines were more about shifting and combining certain rules and regulations into one large document rather than instituting sweeping changes. For example, one staff member at IU referred to the Uniform Guidance as simply “a different set of bookmarks.” Further, all participants agreed that the most significant changes to the federal regulations would probably only adversely affect large, research-intensive institutions.

However, research administrators across all three ERIs included in this study did note one of the biggest challenges in the uniform guidance (2014) was in procurement regulations. Although the procurement offices at MU and IU handle all institutional purchasing regardless of funding source, The SPO at AU is responsible for processing all purchases associated with externally funded grants and contracts. AU staff members also remarked that these more prescriptive regulatory changes would allow them the opportunity to pass externally funded procurement duties to the procurement office. Thus, SPO staff members at AU viewed the uniform guidance (2014) as a way to lessen their work burden.

Although federal funding awarded to IHEs during the years immediately following World War II typically did not include compliance with regulatory mandates, these circumstances quickly changed when agencies began to focus on accountability (Beasley, 2006). Norris and Youngers (1998) observed that as the regulatory environment for managing sponsored funding became increasingly complex, it altered the nature of research administration: It shifted from a profession primarily focused on supporting
faculty through the pre-award process to one of focusing on both proposal support functions and regulatory compliance. These shifts are indicative of findings reported by Schneider and colleagues (2012) on faculty who reported spending 42% of the time allocated to externally funded projects on administrative tasks.

**Recommendations for Practice**

Study findings suggest several recommendations for practice. For example, SPO staff members and CROs should work with administrative leaders at ERIs to develop a realistic understanding about the institution’s research enterprise, including (a) its potential contribution to enhancing the institutions’ ability to acquire scarce resources, (b) the need to develop the capacity of the SPO to support faculty pursuing external funds, and (c) the re-culturing of the institution through development of policies that reward faculty for pursuing and acquiring external funds. Although chief academic officers and other cabinet-level officials have competing responsibilities that may inhibit expert knowledge in any one area, a cursory understanding of research administration and reliance on their CROs as advisors in the decision-making process may prove beneficial.

Study findings indicate that although ERIs included in the study had different organizational structures, roles, titles and number of SPO staff members, all increased their federally funded research expenditures. These data affirm the perspective of Hoy and Miskel (2007) who posit that organizations may operate effectively through a variety of different structures and processes. Despite variation among ERI organizational structures, there is a shared understanding of the need to establishing an institutionally appropriate research structure to ensure success of their respective research enterprises. The importance of appropriate structures is underscored by the case of IU, which created
a large and highly specialized structure that effectively inhibited rather than stimulated
development of support services. Consequently, it is important for ERIs to implement
size-appropriate strategies rather than simply emulating those in place at research-
extensive institutions. Further, the lack of strategic planning for research was endemic
among all three universities studied, given the absence of any cohesive strategic research
direction. An understanding of the dynamic relationship between occurrences in the
external environment and their effect on the institution in this context can provide these
ERIs with the feedback necessary to make appropriate alterations to their work and
organizational structures, allowing them to develop cogent responses aimed at
strengthening research efforts.

In order to support faculty research development, ERIs may be well served by
investing in comprehensive internal grant programs that prepare and motivate faculty to
submit proposals to acquire external support. In the current austere budget climate for
IHEs, resources must be strategically allocated. For example, data from MU indicated
there are numerous sources of internal funding beyond the SPO. Findings suggest that
these multiple and competing internal funding sources at MU may actually be hindering
efforts to develop the capacity of faculty to compete for external funds.

In addition, monetary incentives should be focused on rewarding faculty who
complete research proposals to secure external funding rather than providing monetary
incentives to those who may submit proposals as a way to supplement their income. In
sum, internal funding programs should be managed solely by the research enterprise to
provide a consistent and coherent program to enhance institutional capacity to conduct
research.
Finally, despite tight budgets, ERI decision makers should consider investing in an ERA system for a sponsored programs workflow process. As the research enterprise becomes increasingly competitive and complex, practitioners have noted the attempt “to manage such extensive changes with a paper-based research administration system is becoming increasingly cumbersome, not to mention time-consuming” (Collins et al., 2012). Of the three ERIs in the study, administrative staff of the two still using a paper-based system spoke in depth about that process’ negative effect on productivity. Conversely, the ERI that has instituted an ERA program reported its positive effect on productivity.

**Recommendations for Further Research**

Study findings may provide insights that may enrich understanding of ERI efforts to enhance the acquisition of external research support. This study focused on the role of ERIs and SPOs in assisting their respective institutions in adapting to external environmental changes. These organizational units were perceived as a way for institutions to acquire resources as state-level allocations declined. Although findings from this exploratory study provide insight into adaptive processes in declining resource contexts, future studies may examine those experiencing similar circumstances in other states to determine if findings would be similar. Conversely, conducting a similar study in a state where allocations to IHEs are stable or increasing may offer a broader understanding of how ERI research development may enable institutions to adapt to these different circumstances.

Findings from this study provide insights into the disconnect between research staff and upper-level administrators with regard to the function of the research enterprise...
and its role in securing scarce resources for the institution. Additional studies investigating the perceptions of ERI vice presidents and provosts about research on their campuses may provide a broader understanding of this phenomenon. A similar manner of study of ERI faculty perspectives on their role in securing external research support may provide insight into cultural norms, values and beliefs.

One of the challenges emerging from this study was the inherent incongruity between the SPO desire for institutional tenure and promotion policies that give greater weight to securing external research support (i.e. sponsored research production) and the traditional ERI focus on teaching. Future studies may investigate the level of influence external funding has in tenure and promotion decisions at ERIs from the perspectives of department chairs, college deans and provosts to better understand how changes in tenure and promotion policies may be viewed and whether they may motivate individuals to pursue external funding.

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APPENDIX A

SPONSORED PROGRAMS OFFICE STAFF AND CHIEF RESEARCH OFFICER PRE-SURVEY

1. Tell me about your education, prior work experience, and what led you to your current position.

2. How long have you worked at this institution? How long have you worked in the office of research and sponsored programs?

3. What are your formal responsibilities in your current role? What, if any, are informal responsibilities that you also assume?
APPENDIX B

PRE-SURVEY COVER LETTER

Form_F-CL Template

PRE SURVEY COVER LETTER

Date

Dear Participant:

My name is Scott Niles and I am a doctoral candidate in the Department of Educational Leadership Studies at the University of Kentucky. My dissertation, titled "Environmental Change and Adaptation in Kentucky Emerging Research Institution Sponsored Programs Offices: A Multiple-Case Study," aims to investigate the relationship between environmental changes and adaptive responses in Kentucky Emerging Research Institution research administration offices aimed at increasing federal research fund procurement.

I am inviting you to participate in this research study by completing the attached pre-survey. This survey will require approximately 15-20 minutes to complete. There is no compensation for responding nor is there any known risk for participating. If you choose to participate in this project, please answer all questions as honestly as possible and return the completed questions promptly to me at s.niles@moreheadstate.edu. Your response to the survey will be kept confidential, which means no names will appear or be used on research documents, nor be used in presentations or publications.

We will keep confidential all research records that identify you to the extent allowed by law. However, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

Participation is strictly voluntary and you may refuse to participate at any time.

If you have any questions about this study, you can contact the person(s) below:

Scott Niles
Morehead State University/University of Kentucky
150 University Blvd.
Morehead, KY 40351-1689
304-633-9541
s.niles@moreheadstate.edu

Lars G. Bjork, PhD
Professor, Educational Leadership
111D Dickey Hall
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Lexington, KY 40506
859-257-2450
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If you have complaints, suggestions, or questions about your rights as a research volunteer, contact the staff in the University of Kentucky Office of Research Integrity at 859-257-9428 or toll-free at 1-866-400-5423.

Thank you for taking the time to assist me in my educational endeavors.

Sincerely,
APPENDIX C

INTERVIEW PROTOCOLS

FOR CRO, DIRECTOR OR ASSISTANT/ASSOCIATE DIRECTORS ONLY

1. Can you briefly give me a historical picture of trend changes in the grant/sponsored research activity at your institution?

2. What are the various factors you think contributed to these trends?

3. How does the institution’s administration view research and the pursuit of external research funding?
   a. Has this view changed over time? If so, how?
   b. What are examples of how this view is articulated?
      i. (GIVE EXAMPLES ONLY IF THEY STRUGGLE TO ANSWER) For example, policy on faculty release time, money for internal grants, recognition of research accomplishments, etc.

4. Tell me about the structure of your office with respect to titles, divisions, roles etc.
   a. Can you speak to the evolution of this structure?
   b. Do you see any correlation between your office structure and the trends in grant/sponsored research activity you articulated earlier?

5. Tell me about the services your office provides to grant seekers. (LOOK FOR A SHIFT FROM BEING RESPONSIVE TO ACTIVELY ENCOURAGING RESEARCH)
   a. How have these services changed over time?
b. In what ways do these services affect your institution’s research productivity?

c. Is there an emphasis on growth? If so, in what areas? (applications, awards, new faculty participation, etc.) Can you speak to the underlying strategy behind this emphasis?

6. Has your institution as a whole been affected by budget cuts? How?
   a. What effect, if any, have those cuts had on the office of research and sponsored programs?

7. How closely do you follow/track federal research expenditures?
   a. What, if any, effects of those expenditures have you seen directly at your institution?
   b. Do you believe productivity trends at your institution are affected by federal research expenditures? (Directly, Indirectly or not at all)

8. What is your interaction with Marketing in regard to promoting funding successes?

9. How has the implementation of 2 CFR 200 affected the work of your office?
1. From your perspective, are there any trends you see happening in the grant/sponsored research arena at your institution? If yes, can you describe them and what factors do you see contributing to them?

2. What role do you see University administration playing in the pursuit of external research funding?
   d. Has this changed since you started at the institution? How so?
   e. In what ways are these views illustrated?

3. Tell me about the services your office provides grant seekers.
   a. Have these changed in any way since you’ve been working in this office?
   b. If so, how?
   c. In what ways do you think these services contribute to your institution’s research productivity?
   d. Is there an emphasis on growth? If so, in what areas? (applications, awards, new faculty participation, etc.) Can you speak to the underlying strategy behind this emphasis?

4. Has your institution as a whole been affected by budget cuts?
   a. If so, what affect, if any, have those cuts had on the office of research and sponsored programs?
   b. If so, what affect, if any, have those cuts had on your specific role?

5. How has the implementation of 2 CFR 200 affected the work of your office?
APPENDIX D

INFORMED CONSENT

Consent to Participate in a Research Study

Environmental Change and Adaptation in Kentucky Emerging Research Institution Sponsored Program Offices: A Multiple-Case Study

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

You are being invited to take part in a research study about environmental change and adaptation in sponsored program offices. You are being invited to take part in this research study because of your position in research administration at a Kentucky Emerging Research Institution. If you volunteer to take part in this study, you will be one of about 20 people to do so.

WHO IS DOING THE STUDY?

The person in charge of this study is Scott Niles, principal investigator and doctoral candidate at the University of Kentucky in the Department of Educational Leadership Studies. He is being guided in this research by Lars G. Bjork, PhD, professor, Educational Leadership Studies.

WHAT IS THE PURPOSE OF THIS STUDY?

By doing this study, we hope to learn how fiscal and regulatory changes have influenced the work of Kentucky Emerging Research Institution sponsored programs offices, and how these offices have adapted to increase the procurement of external research funding. This will provide important information to help smaller institutions of higher education improve organizational structures and processes with respect to research and sponsored programs.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

Other than personal choice, there are no reasons why you should not take part in this study.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research procedures will be conducted at three Emerging Research Institutions in the Commonwealth of Kentucky. The researcher will meet with you in person on campus to conduct an interview at a mutually agreed upon time. The interview will last about one hour and occur only one time.

WHAT WILL YOU BE ASKED TO DO?

Your involvement in the research will be a 1-hour interview. Interviews will be audio recorded and led by the researcher.
WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, the things you will be doing have no more risk of harm than you would experience in everyday life.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

You will not get any personal benefit from taking part in this study.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any benefits or rights you would normally have if you choose not to volunteer. You can stop at any time during the study and still keep the benefits and rights you had before volunteering.

IF YOU DON'T WANT TO TAKE PART IN THE STUDY, ARE THERE OTHER CHOICES?

If you do not want to be in the study, there are no other choices except not to take part in the study.

WHAT WILL IT COST YOU TO PARTICIPATE?

There are no costs associated with taking part in the study.

WILL YOU RECEIVE ANY REWARDS FOR TAKING PART IN THIS STUDY?

You will not receive any rewards or payment for taking part in the study.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep confidential all research records that identify you to the extent allowed by law. You will not be personally identified in these written materials. When we write about the study to share it with other researchers, we will write about the combined information we have gathered. We may publish the results of this study; however, we will keep your name and other identifying information private. We will make every effort to prevent anyone who is not on the research team from knowing that you gave us information, or what that information is.

The names of the institutions of higher education and of those professionals participating in the study will not be reported. Audio recordings will be transcribed and the records of both (audio and transcripts) will be maintained in a locked desk in the researcher’s home.

Audio recordings and interview transcripts will be maintained for six years, in addition to the IRB approvals and informed consent documents. The documents will be shredded and audio files, stored on computer hard drives, will be deleted.

We will keep private all research records that identify you to the extent allowed by law. However, there are some circumstances in which we may have to show your information to other people. For example, the law may require us to show your information to a court. Also, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

University of Kentucky
Revised 9/10/14

Nonmedical IRB ICF Template
If you decide to take part in the study you still have the right to decide at any time that you no longer want to continue. You will not be treated differently if you decide to stop taking part in the study.

The individuals conducting the study may need to withdraw you from the study. This may occur if you are not able to follow the directions they give you, if they find that your being in the study is more risk than benefit to you. There are no consequences to withdrawing from the study.

WHAT ELSE DO YOU NEED TO KNOW?

There is a possibility that the data collected from you may be shared with other investigators in the future. If that is the case, the data will not contain information that can identify you unless you give your consent or the UK Institutional Review Board (IRB) approves the research. The IRB is a committee that reviews ethical issues, according to federal, state, and local regulations on research with human subjects, to make sure the study complies with these before approval of a research study is issued.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the investigator, Scott Niles at 304-833-9941. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky between the business hours of 8am and 5pm EST, Mon-Fri. at 859-257-9428 or toll-free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

Signature of person agreeing to take part in the study

Date

Printed name of person agreeing to take part in the study

Name of (authorized) person obtaining informed consent

Date

Person providing information about the study:
Scott Niles
Principal Investigator
University of Kentucky/Morehead State University
150 University Blvd.
Morehead, KY 40351-1639
Phone: 304-833-9941
Email: s.niles@moreheadstate.edu
APPENDIX E

DOCUMENTATION OF IRB APPROVAL

UK
UNIVERSITY OF KENTUCKY

Office of Research Integrity
IRB, IACUC, RDRC
315 Kinkel Hall
Lexington, KY 40506-0857
859 257-9428
fax 859 257-8995
www.research.uky.edu/oir/

Initial Review

Approval Ends
June 24, 2016

IRB Number:
15-0421-P4S

TO:
Scott Niles
Education Leadership
224 Carrington Court
Huntington, WV 25701
PI phone #: (606) 783-2278

FROM:
Chairperson/Vice Chairperson
Non-medical Institutional Review Board (IRB)

SUBJECT:
Approval of Protocol Number 15-0421-P4S

DATE:
June 30, 2015

On June 26, 2015, the Non-medical Institutional Review Board approved your protocol entitled:

"Environmental Change and Adaptation in Kentucky Emerging Research Institution Sponsored Programs: Offices: A Multiple Case Study"

Approval is effective from June 26, 2015 until June 24, 2016 and extends to any consent/assent form, cover letter, and/or phone script. If applicable, attached is the IRB approved consent/assent document(s) to be used when enrolling subjects. [Note: subjects can only be enrolled using consent/assent forms which have a valid "IRB Approval" stamp unless special waiver has been obtained from the IRB.] Prior to the end of this period, you will be sent a Continuation Review Report Form which must be completed and returned to the Office of Research Integrity so that the protocol can be reviewed and approved for the next period.

In implementing the research activities, you are responsible for complying with IRB decisions, conditions and requirements. The research procedures should be implemented as approved in the IRB protocol. It is the principal investigator's responsibility to ensure any changes planned for the research are submitted for review and approval by the IRB prior to implementation. Protocol changes made without prior IRB approval to eliminate apparent hazards to the subject(s) should be reported in writing immediately to the IRB. Furthermore, discontinuing a study or completion of a study is considered a change in the protocol's status and therefore the IRB should be promptly notified in writing.

For information describing investigator responsibilities after obtaining IRB approval, download and read the document "PI Guidance to Responsibilities, Qualifications, Records and Documentation of Human Subjects Research" from the Office of Research Integrity's IRB Survival Handbook web page [http://www.research.uky.edu/ori/IRB-Survival-Handbook.html/PIResponsibilities]. Additional information regarding IRB review, federal regulations, and institutional policies may be found through ORI's web site [http://www.research.uky.edu/ori]. If you have questions, need additional information, or would like a paper copy of the above mentioned document, contact the Office of Research Integrity at (859) 257-9428.

Chairperson/Vice Chairperson

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VITA
Scott M. Niles

EDUCATION

Master of Arts, Journalism, Marshall University, 2003
Bachelor of Arts, English, Marshall University, 2001

PROFESSIONAL EXPERIENCE

Associate Editor
07/2012 – Present  Life Sciences Editing & Review, Portland, Maine

Grants & Contracts Administrator
08/2007 – Present  Morehead State University, Morehead, Kentucky

Grant Writing Specialist
04/2005 – 08/2007  Our Lady of Bellefonte Hospital, Ashland, Kentucky

Grant Writing Specialist
04/2005 – 08/2007  St. Claire Regional Medical Center, Morehead, Kentucky

Assistant Account Executive

INSTITUTIONAL SERVICE

Morehead State University

07/2014 – Present  Vice Chair, Staff Congress
07/2014 – Present  Member, President’s Leadership Council
02/2014 – Present  Member, Institutional Technology Advisory Board
11/2009 – 11/2010  Center for Regional Engagement Grant Review Committee
07/2008 – Present  Member, Staff Congress

TEACHING EXPERIENCE

Fall 2008  Adjunct Instructor, Communication, Media & Leadership Studies
          Morehead State University, Morehead, KY

01/2002 – 12/2003  Graduate Assistant, School of Journalism & Mass Communications
                Marshall University, Huntington, West Virginia
CERTIFICATIONS

05/2008 – Present  Certified Research Administrator (CRA)
Research Administrator’s Certification Council

PROFESSIONAL ASSOCIATIONS

09/2007 – Present  Member, National Council of University Research Administrators
01/2010 – Present  Member, Society of Research Administrators International

PRESENTATIONS

Niles, S. M. (2015, November). Anatomy of an NIH R15 AREA Proposal. In N. Cooper (Chair), NIH R15 Area Grant Writing Workshop. Symposium conducted at the meeting of the Kentucky Academy of Science, Louisville, KY.

Niles, S. M. (2014, November). Anatomy of an NIH R15 AREA Proposal. In N. Cooper (Chair), NIH R15 Area Grant Writing Workshop. Symposium conducted at the meeting of the Kentucky Academy of Science, Lexington, KY.

Niles, S. M., Roach, R. G. & Schack, E. (2014, October). Grant Funding: Building a proposal on your ideas. In M. C. Henson (Chair), Funding and Grant Writing Symposium. Symposium conducted at Morehead State University, Morehead, KY.

Niles, S. M. (2013, September). Anatomy of an NIH R15 AREA Proposal. In N. Cooper (Chair), NIH R15 Area Grant Writing Workshop. Symposium conducted at the meeting of the Kentucky Academy of Science, Lexington, KY.


Niles, S. M. (2012, October). Anatomy of an NIH R15 AREA Proposal. In N. Cooper (Chair), NIH R15 Area Grant Writing Workshop. Symposium conducted at the meeting of the Kentucky Academy of Science, Lexington, KY.