

THE ROLE AND DEVELOPMENT OF THE RESEARCH ADMINISTRATION
PROFESSION IN HIGHER EDUCATION

By

DANIEL RAY LEHNE CAMPBELL

A thesis submitted in partial fulfillment of
the requirements for the degree of

MASTER OF ARTS in EDUCATIONAL ADMINISTRATION

WASHINGTON STATE UNIVERSITY
Department of Educational Leadership and Counseling Psychology

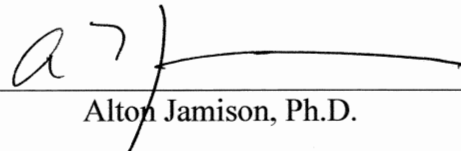
May 2010

To the Faculty of Washington State University:

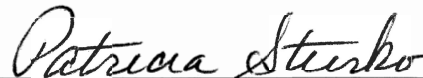
The members of the Committee appointed to examine the thesis of DANIEL RAY LEHNE CAMPBELL find it satisfactory and recommend that it be accepted.



Michael Pavel, Ph.D., Chair



Alton Jamison, Ph.D.



Patricia Sturko, Ph.D.

ACKNOWLEDGEMENTS

As with any work of this nature several thanks are in order. First to my thesis committee, Dr. Michael Pavel, Dr. Alton Jamison and Dr. Patricia Sturko. Thank you for your guidance, patience and support in this endeavor. Your time and dedication to students is unmatched and I greatly appreciate all that you have done for me personally and professionally as I completed my masters program. Next, I would like to thank my colleagues in the profession of research administration and higher education. While there are too many to name individually, these professionals are one of the major reasons this study was initiated. I would however like to acknowledge and thank Mrs. Nancy Shrope for introducing me to the profession of research administration and serving as a fantastic mentor and colleague. To my parents, Dan and Paula Campbell, thank you for always believing in me and encouraging me to pursue my dreams. I could not have come this far in life without your love and guidance. Finally, more thanks than can be put into words go to my wife Kelli. You are simply the most amazing person I know. You have sacrificed so much so that I could pursue this degree and I you to know that I appreciate you beyond measure. Without your support and understanding we could never have finished this degree. Thank you for always being there for us as a couple and for us as a family.

THE ROLE AND DEVELOPMENT OF THE RESEARCH ADMINISTRATION
PROFESSION IN HIGHER EDUCATION

Abstract

By DANIEL RAY LEHNE CAMPBELL, M.A.
Washington State University
May 2010

Chair: Michael Pavel

Research administration is described in this study as the profession dedicated to the successful administration of research endeavors in the academy and beyond. This study utilizes a thematic approach to examine the unified literature base of the peer reviewed publications dedicated to the profession and address two questions: (1) What are the major themes in the literature dedicated to research administration? (2) What could the next ten years of the profession look like? The data analyzed spans forty years from both the *Journal of the Society of Research Administrators* (and its successor the *Journal of Research Administration*) and *Research Management Review*. Findings include forty-two elemental sub-codes classifying the components of research administration, organized under three hierarchical organizational stems. Findings also include the identification of four major eras in the profession including persistent and emerging thematic elements by era. Using the elemental sub-codes and using an interrelationship of sub-codes and functional area matrix, this study discovered four major themes in the profession. The analysis of the sub-codes, eras and identified themes provides a framework for the identification of potential next steps in the research administration profession. The study concludes with a series of recommendations for future research.

TABLE OF CONTENTS

AKNOWLEDGEMENTS.....	iii
ABSTRACT.....	iv
LIST OF TABLES.....	vii
LIST OF FIGURES.....	viii
CHAPTER	
1. INTRODUCTION.....	1
Project Significance.....	3
Purpose of Study	4
2. REVIEW OF LITERATURE.....	5
Introduction.....	5
History of Research Administration.....	6
Types of Research Administrators.....	9
<i>Central Research Administrator</i>	9
<i>Departmental Research Administrator</i>	10
3. RESEARCH METHODS	12
Materials Analyzed.....	12
Data Analysis.....	14
<i>Phases of Data Analysis</i>	15
Conceptual Framework.....	17
Limitations.....	18
4. RESULTS	19
Results of Sub-Code Identification.....	20
<i>Hierarchal Organizational Stem Sub-Codes – Professional</i>	20
<i>Hierarchal Organizational Stem Sub-Codes – Technical Body of Knowledge</i>	25
<i>Hierarchal Organizational Stem Sub-Codes – Author Ethnographic</i>	30
5. DISCUSSION AND FUTURE RESEARCH.....	37

Research Administration in Higher Education

Persistent and Emerging Thematic Elements by Era..... 38

Expansion Era – 1940-1960..... 38

Transition Era – 1960-1980..... 39

Para-Professional Era – 1980-1990..... 39

Independent Professional Era – 1990 – 2009..... 40

What are the Major Themes in the Literature Dedicated to Research Administration.. 41

Research Administrators as Servant Leaders..... 42

Research Administration is a Reactionary Developed Profession..... 42

Policy Follows Process..... 43

Training in the Profession is More Example Based Than Theory Based..... 44

What Could The Next 10 Years of the Profession Look Like..... 45

Summary and Recommendations for Future Work in the Profession..... 47

Potential Future Research..... 49

Recommendation 1..... 49

Recommendation 2..... 49

Recommendation 3..... 50

REFERENCES..... 51

APPENDIX

A. Determination of Study's Applicability under 45 CFR 46..... 57

LIST OF TABLES

1. Hierarchal Organizational Stem – Professional.....	21
2. Hierarchal Organizational Stem – Technical Body of Knowledge	25
3. Hierarchal Organizational Stem – Author Ethnographic.....	30
4. Interrelationship of Sub-Codes and Functional Area of Research Administration	33

LIST OF FIGURES

1. Matrix of Persistent and Emerging Thematic Elements by Era.....	35
2. Taxonomy of Identified Major Themes, Hierarchial Stems and Sub-Codes.....	36

Research Administration in Higher Education

Dedication

To my family, without whom nothing in my life would be possible.

CHAPTER ONE

INTRODUCTION

The accepted activities of higher education traditionally fall into one of three categories, teaching, research, or service. Since World War II, the nature of research in the academy has evolved into one of the primary activities of the academy, especially in the modern research university. Participating in that research enterprise are faculty who conduct the work, and research administrators who both navigate and administer the increasingly complex world that funds and oversees the research.

Historically, research administration has evolved from a support function provided by secretarial and business staff into a fully fledged profession. Defined for this study as the activities and work associated with developing, administering, accounting for and complying with requirements, guidelines and laws relating to extramurally funded projects, the profession of research administration is a critical part in ensuring the continued functions of the larger research enterprise.

This thesis examines research administration as a profession using three constructs. The first construct is historical, examining the emerging and persistent themes in the literature while developing a new set of functional eras that describe the evolution of the profession. The second construct is a component construct utilizing a hierarchical structure to categorize the foundational elements of this profession as described in the literature to understand and frame the elements that form the foundation of research administration as a profession. The final construct a graphical taxonomy of the foundational elements to consolidate and describe the major thematic elements of the profession to date. A matrix of the foundational elements of the profession of research

administration and their relation to the type of research administrator (departmental or central) will also be developed to triangulate the foundational elements ensuring that no major themes are specific to any one particular type of research administrator. Drawing from those findings, a new perspective will be added to the potential future of the profession.

Chapter One presents an introduction to the study, the significance of the work to be conducted and the research questions to be addressed. Chapter Two provides a comprehensive review of the literature examining both the historical development of the profession, a discussion of external factors that have shaped research administration and finally provides a generalized description of the framework of the profession regarding the practitioners. Chapter Three describes the methodological approach to the data analysis, including the conceptual framework, perspectives and constructs used for this study. The results of the thematic analysis are summarized in Chapter Four. Chapter Five addresses the major themes identified as well as the potential future of the profession, while making a series of recommendations about possible future research and work in the field of research administration.

For the purposes of this study, the departmental administrator perspective is defined as the role held by an individual whose occupational focus is on the daily administering of the research projects in conjunction with the faculty member who is actually conducting the research. Departmental administration can include activities such as identifying new sources of funds, budget development and management, laboratory management, faculty specific regulatory and compliance issues (Animal Care and Use, Institutional Review Boards), and, research project administration and other activities that

are one level removed from working directly with the funding agency. For the purposes of this study, the central administrator is defined as individuals who work on behalf of the institution receiving the extramural award to properly submit, receive, account for and meet all compliance issues as defined by the numerous funding agencies and the federal government. The central administrator is also responsible for contract negotiation and technology transfer. In summation, the central research administrator is the professional whose main occupational activity involves direct, authorized and legally binding contact with a regulator, funding agency or company. (Langley & Ofosu, 2007; Lasker & Morris, 1992; Norris & Youngers, 2000; Shisler, Dingerson, & Eveslage, 1988).

Project Significance

Research administration is a relatively new profession, having evolved in the context of higher education from business affairs and management divisions of higher education (Kulakowski & Chronister, 2006; Langley & Ofosu, 2007). Similar to medicine, practitioners in research administration must understand a large variety of topics ranging from business to law, human dynamics, and management theory while developing a basic understanding of the research efforts of their faculty that range from art to zoology. While previous studies such as Stein and Fajen (1995), Fairweather (2002) and Trainer (2008) examine research productivity and outcomes measurement for higher education, there are limited studies examining the role of the professionals who support research and the outcomes being measured. A thorough thematic analysis of the field, as described through the literature in the two major peer reviewed journals dedicated to the profession will provide a greater insight into the impacts of research administration on the larger enterprise known as higher education and provide a new

jumping off point for future inquiry into research administration both as a profession and as a critical link in the research endeavors of universities and beyond.

Purpose of the Study

The purpose of this study is to conduct a thematic analysis of the research administration profession by examining the unified body of knowledge contained in the two peer reviewed journals dedicated to the profession, *The Journal of Research Administration*, and *Research Management Review*. To complement the literature and supplement the existing research on the profession of research administration, the following two questions will be examined:

Research Question One: What are the major themes in the literature dedicated to research administration?

Research Question Two: What could the next ten years of the profession look like?

CHAPTER TWO

REVIEW OF LITERATURE

Introduction

The profession of research administration is focused primarily on the internal regulation of the research, as opposed to the research itself (Hansen & Shisler, 1992; Kulakowski & Chronister, 2006). The management of the research, shaping the direction and the focus of the actual science remains in the purview of the faculty. The profession of research administration can be likened to medical practice where practitioners must be knowledgeable “doctors” who specialize in fields where the sub-focus is on a particular emphasis such as technology transfer or financial compliance.

Literature focusing on the subject of research administration is extremely dispersed in topics, but is lacking compared to other professions. Currently, the only journals dedicated to the profession of research administration are the *Journal of Research Administration* and *Research Management Review*. The *Journal of Research Administration* is published by the Society of Research Administrators. For this project, unprecedented access was granted to archives dating back to 1969, the first year this peer reviewed journal was published. *Research Management Review* is the publication of the National Council of University Research Administrators (NCURA) and is available dating back to 1987. Combined these two journals form the unified literature base and body of knowledge for the profession known as research administration. Additional research was conducted using standard literature research techniques, web searches and

reference cross checking to conduct a critical analysis of the existing literature and a review of texts that focus on both management and organizational theory.

History of Research Administration

The evolution of research administration can be tied directly to the evolution of formal research in America, particularly with the growth of research in higher education (Beasley, 2006; Streharsky & Smith, 2002). Research administration as a profession evolved in higher education, an environment that has been described as “fragmented” (Duryea, 2000) loosely coupled and coordinated (Birnbaum, 1988; Weick, 1976). The profession of research administration grew as funding agencies, concerned with the decentralized models of management that many universities utilize (Brown, 2000; Myers, 2007; Myers & Smith, 2008a) increased their demands for reporting and regulations regarding the research.

From the late 1700’s until the early 1940’s, the unofficial policy of the United State Government was not to support scientific research (Beasley, 2006). While individual agencies were allowed to fund mission specific projects, no centralized coordinating body existed, nor did many of the federal regulations that govern research today (Myers & Smith, 2008b). What coordination that did occur was between the federal agency and the recipient organization (usually managed by a scientist) with some assistance from the business offices of the institution where the scientist worked.

Frustrations with the lack of coordination between military and private scientists created a push for an organizing body at the federal level to coordinate efforts (Bush, 1945). Beginning in the early 1940’s the movement to persuade Congress to formalize an oversight body to coordinate military research was being prepared, but following the

outbreak of hostilities between France and Germany, a proposal entitled *Science, the Endless Frontier* would be developed and fast tracked to then President Roosevelt. This report would form the working guidelines for the National Research and Defense Council (NRDC), the first national level coordinating body for research in the United States (Zachary, 1997). The NRDC would become a critical first step in the federal government's development of regulation and oversight. In 1941, the NRDC was reorganized into the Office of Science and Research Development (OSRD), and would serve as the body to undertake one of the largest and single most important research projects to date, the Manhattan Project. Based largely on volume of awards and type, in 1943 the OSRD was turned over to the Army which continued to fund military research applications at a rate unheard of in the history of America (Zachary, 1997). President Roosevelt, sensing the potential for peacetime applications for federal research requested that his new Presidential science advisor and author of *Science, the Endless Frontier* Dr. Vannevar Bush (1945) outline the importance and elements of "a proposal by which both military and non military research could be conducted during periods where war was not paramount" (p. 1). This recommendation by Dr. Bush, coupled with the 1944 Public Health Service Act, would lead to the rapid growth and expansion of governmental investment into both military and non military research. Ultimately the Bush proposal of 1945 would become the catalyst for the need of research administrators (Beasley, 2006).

As the OSRD began to shut down at the federal level and was replaced by the numerous individual government agencies and offices that were now funding research, many universities kept their OSRD liaison offices to develop and coordinate new peacetime work. The continuation of research efforts, adding to the structure of loose

coupling (Birnbaum, 1988) in the overall organization of higher education, created a unique division between the business side of the institution which at the time was charged with managing financial and contractual responsibilities of the institution, and the academic side that had the charge of nurturing and maintaining the institutional research enterprise. It was during the 1950's and 1960's that professional societies began to emerge, focusing on supporting the growth of the emerging profession of research administration (Nicholsen, 1969). The National Council of University Research Administrators (NCURA), the now inactive National Conference on the Administration of Research (NCAR) and the Society of Research Administrators were all developed during this period to focus on various professional and technical aspects of research administration. While each of these groups had its own foci that evolved over the years, the shared effort of all the societies was to provide those individuals now specializing in the numerous federal requirements that were driving the development of this new profession (Norris & Youngers, 2000) an outlet to discuss, grow and form networks to handle the increasing demands of the faculty who were being served (Atkinson, Gilleland, & Barrett, 2007).

The literature demonstrates extensively that as a support system to the research enterprise, research administration evolved in response to the growth of regulations created to oversee the public's investment into research (Bowonder, 1980; Brandt, 1997a; Cosico, 2006; Kerwin, 1982; Landen & McCallister, 2002; Myers, 2007; Nicholsen, 1969; Rodman, 1983; Sink, 1985). The requirements to meet these regulatory constraints created an administrative void that could not be filled by the researchers, and was beyond what the business affair staffs were capable of supporting, and as a result, during the

1970's and 1980's, the professional research administrator began to fully emerge from the business manager profession. This evolution from business managers to focused professionals has taken on an even greater separation as the profession has evolved.

Types of Research Administrators

While the history of research administration has been tied closely to the demands of regulatory compliance (Myers & Smith, 2008a), the functions of the profession have evolved beyond that role. The two major groups of research administrators are the central administrator and the departmental administrator (Kulakowski & Chronister, 2006). A 1984 study conducted by the National Council of University Research Administrators (NCURA) found that individuals engaged in the profession at the central administrative level located themselves primarily in one of two sub-groups; Pre-Award, which is concerned with the activities of research culminating in the submission of the proposal, and Post-Award, which engages in activities initiating at the funding of an award and concluding with the closeout of a grant. An analysis of the literature demonstrates that while Central Pre- and Post-Award administrators are the predominant roles for research administrators, a third group is also emerging in the form of departmental research administrator (Bowonder, 1980; Butler, 2000; Cole, 2007; Collinson, 2007; Kulakowski & Chronister, 2006).

Central Research Administrator. The major functions of the pre-award office consist of all events occurring up to the submission of the proposal. While the actual functions can and do vary by institution, the natural organization of a Pre-Award office includes proposal development, budget development, regulatory compliance and assurances (Institutional Review Boards, Institutional Animal Care and Use Committee,

Select Agent Management, Circular Interpretation), contract negotiation and other functions as determined by institutional need and demand (Norris & Youngers, 2000). New research development (searching for funding opportunities, program and large scale project development) are other activities that have been attributed to this category of research administrator (Atkinson, et al., 2007; Bowonder, 1980).

The Post-Award functions of a research administrator in many instances are evolutionary remnants from the business affairs staff from which research administrators evolved. According to the major text in the field (Kulakowski & Chronister, 2006), the functions associated with post-award category include facilities and administrative cost recoveries, financial reporting, interactions with auditors, expense monitoring, accounting, institutional financial management as well as Office of Management and Budget (OMB) circular interpretation and enforcement. Other areas that are involved in the profession of research administration at the post-award level include the technology transfer professionals, who specialize in taking faculty discoveries to the marketplace, working with patent attorneys and coordinating research foundations (Cole, 2007; Gabriele, 1998).

Departmental Research Administrator. The departmental research administrator can exist in both the pre-and post-award worlds, working to implement the pre-award activities necessary for proposal development, while serving as a front line operator for the daily management of the funded research (Foutty, 1995). Based on previous research into the profession of research administration, several key and widely used works (Bowonder, 1980; Gabriele, 1998; Kulakowski & Chronister, 2006) summarize the departmental administrator as the primary interface to the central administration on

behalf of the faculty. Previous research into occupational identity of research administrators have found that departmental research administrators often bridge the divide between the academic departments that they report to and the administrative offices that they interact with on behalf of the faculty (Collinson, 2007). Studies suggest that while the profession of research administration evolved as a result of the increasing regulatory demands from external agencies, the departmental administrator evolved as a result of internal complexities resulting from institutions attempting to meet those external demands (Shelley, 2009; Shisler, et al., 1988).

CHAPTER THREE

RESEARCH METHODS

This thesis utilizes a thematic analysis design to examine the unified literature base of the two peer reviewed journals dedicated to the profession of research administration. The goals of this study are to (1) identify the major themes in the literature dedicated to research administration, and using that thematic analysis, (2) project what could the next ten years of the profession look like? This chapter includes a description of the materials analyzed, the stages of data collection and analysis procedures.

Materials Analyzed

Currently, the only journals dedicated to the profession of research administration are the *Journal of Research Administration* and *Research Management Review*. The *Journal of Research Administration* is published by the Society of Research Administrators. Founded in 1967, Society of Research Administrators (2009) state that “The Society of Research Administrators International is dedicated to the education and professional development of research administrators working in varied organizational settings as well as the advancement of research administration as a profession around the world” (About SRA para.1).

For this project, unprecedented access was granted to archives dating back to 1969, the first year this peer reviewed journal was published. According to the SRA Contributing Authors Guidelines (2009) state that

The Journal of Research Administration publishes a wide variety of articles intended to enrich and advance the body of knowledge of research administration as well as the art and science of the profession itself.

Authors can submit manuscripts reflecting diverse topics such as the role of the research administrator; methods to improve research management; sponsored projects management; techniques to enhance the management of research; higher education-industry partnerships; use of new technologies; knowledge management and information technology; research ethics and integrity; standards for the responsible conduct of research; regulatory compliance; strategic planning and mission development; organizational theory and organizational psychology, human resource management; procedures that stimulate faculty interest in research; research financial management; research law; intellectual property; technology transfer; continuing education goal/programs and professional development for all personnel; globalization; international relations; and other timely subjects that would be of interest to research administrators employed in the public or private sectors. (p. 1)

As the oldest journal dedicated to the profession, 699 articles were selected, representing the total available reference articles published by the journal through Fall 2009 (most recent issue available at the time of this study).

Research Management Review is the publication of the National Council of University Research Administrators (NCURA). Founded in 1960, the core mission and purpose of NCURA (2009) is to be a society that

Serves its members and advances the field of research administration through education and professional development programs, the sharing of knowledge and experience, and by fostering a professional, collegial, and respected community. Combined these two journals form the unified literature base and body of knowledge for the profession known as research administration. (p. 1)

Archives are available for *Research Management Review* beginning with the inaugural issue in 1987, through the current issue as of this study which is Spring/Summer 2009. According to the authors instructions in *Research Management Review* (2010) “Articles are full-length research/technical papers of value and interest to the journal readership. They must be original reviews of past practice, present information of current interest, or probe new areas...” (p. 1). A total of 111 articles were selected representing the total number of articles available from this journal. It is important to note that while the numerical sequencing of *Research Management Review* is consistent in its publications, the timing of those publications is erratic.

Data Analysis

To complement the literature and supplement the existing research on the profession of research administration, the following two questions are examined:

1. What are the major themes in the literature dedicated to research administration?
2. What could the next ten years of the profession look like?

To fully analyze the relevant themes, data analysis was conducted in four phases. In summation, Phase I included organization of the data and the reference materials using EndNote reference manager software with a custom developed output style to record both

notes, capture keywords, and other research related information. Phase II involved the development of a thematic codebook, using three top-level hierarchal organizational stems developed *a priori* for this study serving as high level groupings for the identification of foundational elements (Flick, 2009; Miles & Huberman, 1994). The three hierarchal organizational stems developed are the Professional, Technical Body of Knowledge and Author Ethnographic. Phase III involved a multi-phased review of the data, first to establish basic location in the grouping using keyword and title analysis, then a thorough review of the articles themselves to extract key elements and themes. Phase IV involved the finalization of a thematic matrix and a graphical representation of the themes organizational structure. The groupings are developed from the existing structure of Kuklowski and Chroinster (2006) as a means to organize the work relevant to the data being examined.

Phases of Data Analysis. Phase I - Organization of Data. As described by Flick (2009) and Miles & Huberman (1994) the organization of the data is a critical first step in thematic analysis. Utilizing EndNote Reference Manager 12, the data sets are electronically captured in conjunction with the physical copies of the data. With the access granted by the SRA Editorial Board and Office of Counsel, non-publically available data was also available for analysis. Utilizing EndNote Reference Manager both keyword analysis and research notes are able to be captured, thus increasing the overall organization of the data for analysis purposes. For this study, a custom output style was designed in EndNote to generate research notes analysis reports for use in subsequent phases of the research.

Phase II - Development of a Thematic Codebook. Flick (2009) clearly describes the process for the development of a codebook to structure the review and analysis of the data. Utilizing a codebook with major categories allows for an initial structure by which to organize the data into sets for more detailed analysis (Flick, 2009). While the major categories (called hierarchal organizational stems for this study) are developed *a priori*, additional stems were by design allowed if discovered during the analysis of the data.

The first of the three hierarchal organizational stems developed is the Professional, which includes articles focusing on the profession, roles, education/training, and impact of the research administration on research. The second hierarchal organizational stem is the Technical Body of Knowledge, which refers to interpretations of regulations, usage of new techniques/systems, policy evolution, and articles focusing on the application or practice of the profession. The third hierarchal organizational stem developed is the Author Ethnographic, which can include subjects such as history, reflections, thoughts, commentaries or opinions on the profession. Data in the third hierarchal stem can also serve as mini ethnographic studies in their own right, providing analysis of topics at a level that are beyond the scope or resources of this study.

Phase III - Multi-Phased Review of the Data. Thematic analysis utilizes multiple reviews of the data to ensure that the initial and final groupings correlate and that the major themes and sub-themes are properly and completely extracted (Creswell, 2007; Flick, 2009; Flick, et al., 2007; Miles & Huberman, 1994). The first pass of the data involved initial grouping using topical and title analysis. Once placement into one of the three hierarchical stems has occurred, a second review of the material was conducted to determine if the initial placement (or coding) is correct and to identify any potential sub-

themes that may exist. The codebook was also refined during this process. The third review of the material is by hierarchical structure, in order of publication, to add to and refine the extracted themes and examine them for meaning.

Phase IV - Matrix and Graphical Taxonomy. This is the final stage in which the matrix of themes is finalized using the data collected and refined during Phase III. The development of a new timeline with persistent and emerging, era specific themes was developed to provide grounding for the analysis of potential major themes. A graphical taxonomy was also developed to see how identified sub-codes influenced the identification of the major thematic elements in the literature. An analysis of the sub-codes as they relate to the departmental and central research administrator was developed to provide triangulation for the sub-codes and the identified major themes to ensure that the major themes are representative of the profession of research administration as a whole. By analyzing those major themes, the elements of the eras and the sub-codes themselves, a conceptual framework was formed to focus the data through a new lens from which to make a prediction on the future of the profession.

Conceptual Framework

The conceptual framework for this type of study is well documented in several qualitative research sources (Cassell & Symon, 2004; Creswell, 2007; Flick, 2009; Miles & Huberman, 1994). Furthermore, Bernard (1994) demonstrates how a graphical taxonomy approach to representing the data can be used in a qualitative approach as both a means of organization and description of results. Kulakowski and Chronister (2006) delineate research administrators by central and departmental. As a grouping code, this deliniation provides a frame for understanding the construction of the profession from the

practitioners perspective while allowing for triangulation using Bernard's approach to discover if the heirachial topics have any grouping overlap or catagorial exclusivity and ultimatley validate the identified major themes.

Limitations

As with any scholarly work, this study has limitations. While this study covers a data set comprised of 710 articles spanning almost 40 years, only two journals are examined. While an exhaustive literature review was conducted to capture any additional background information, the data is purposefully limited to the journals focusing on the profession of research administration. It is possible that additional articles or materials exist that could impact the findings of the study overall. The probability of this is low, considering that the author has been a practicing research administrator since 2001 and has actively participated in both the Society of Research Administrators and the National Council of Research Administrators, which are the major organizations that focus on the practice of research administration. The fact that the author is a practitioner may bias the interpretation of the data, however where notes or comments were located in the personal copies of the journals, new copies were utilized in the analysis as to avoid any previous analysis by the author at the time of initial reading. A third limitation is the hierarchical stems developed *a priori* for this study. While the development of these stems serves as an organizational tool only, it could impact the data at the initial review stage. However, by adopting a multi-level review of the data, the likelihood of miscoding the articles is relatively low.

CHAPTER FOUR

RESULTS

The purpose of this study was to develop a thematic analysis of the profession of research administration by examining the unified body of knowledge contained in the two peer reviewed journals dedicated to the profession, *The Journal of Research Administration*, and *Research Management Review*. To complement the literature and supplement the existing research on the profession of research administration, the following two questions were examined:

Research Question One: What are the major themes in the literature dedicated to research administration?

Research Question Two: What could the next ten years of the profession look like?

The following section discusses the results obtained through the analysis of the data. Using each of the three hierarchal organizational stems, the data was analyzed for initial categorization and the development of sub-codes relating to the elemental foundations of the profession of research administration. Tables 1-3 outline each hierarchal organizational stem and the sub-codes identified through review of the data. Following each hierarchal organizational stem table is a discussion of the sub-categories identified during phases II and III. For purposes of triangulation, Table 4 lists the identified sub-codes as they related to the functional areas (departmental and central) of research administration. Figure 1 lists the persistent and emerging themes by era, and

Figure 2 provides the taxonomy of the major identified themes as they are identified through the hierarchical organization stem structure.

Results of Sub-Code Identification

Table 1. Hierarchal Organizational Stem – Professional

Code: PRF

Definition: Focusing on the profession, roles, education, training and impact.

Description: Material that focuses on the non technical aspects of the profession.

Sub-Codes of the Professional Stem

- PRF1 - Mediator/Expediter
- PRF2 - Research Development
- PRF3 - Mediator/Regulator
- PRF4 - Electronic Research Administration (ERA) and the Profession
- PRF5 - Evaluation
- PRF6 - Research Administration as a Catalyst
- PRF7 - International Professional Development
- PRF8 - Role and Importance of Research Administration in the Organization
- PRF9 - Professional Survival
- PRF10 - Portfolio Management
- PRF11 - Professional Education/Certification
- PRF12 - Evolution of the Profession
- PRF13 - Project Manager
- PRF14 - Research Administration vs. Gift Administration
- PRF15 - Promotion and Recognition
- PRF16 - Communication Bridge

Major Themes

Research Administrators as Servant Leaders
 Research Administration is a Reactionary Developed Profession

Hierarchal Organizational Stem Sub-Codes – Professional. Mediator/Expediter is a sub-code that emerged from data relating to how a professional research administrator must resolve conflicts pertaining to grants administration while ensuring that the research proposals are finalized and submitted to the agency. **Research**

Development identifies the aspects of the profession where research administrators support the development of new research initiatives and how as professionals, research administrators are called upon with increasing frequency to fill the void that exists between faculty drive to generate new research and faculty capacity to actually develop that research.

The **Mediator/Regulator** sub-code describes a subset of the profession that focuses again on the potential conflict within the institution between faculty and institutional administrators as it relates to research. This sub-code focuses on internal self regulation. As the regulatory complexities of research have grown over the years, the technical demands and tangible resources associated with research (particularly biomedical research) have grown, the research administrator has also developed into a regulator. The increased demands from agencies to hold institutions more accountable for the resources allocated to conduct research created a void of administrative demand and control that some functional group had to fill. Research administrators have been called upon to fill that void.

Electronic Research Administration (ERA) and the Profession receives considerable attention in the data. With the rise of the desktop computer in the early 1970's and the 1980's, research administration began to see an influx of interest in using computers to manage the workflow relating to the profession of research administration. Following the technological growth of computer networks such as the internet and intranets of the early 1990's, ERA became a pivotal tool of research administration as a profession. **Evaluation** of the profession of research administration does duplicate some components of higher education. While offices of Institutional Research often compile

data relating to student and institutional achievement, data relating to research productivity is often fragmented, due in part to the dispersed nature of research that is conducted coupled with the lack of a unified theory in how to evaluate research productivity. Often the metrics used to measure productivity outcomes relating to research are defined by institutional offices of research administration. These performance outcomes have a significant impact within the institution and are used for decisions relating to resource allocation, promotion, and marketing of institutional prestige.

Research Administration as a Catalyst builds on the emerging theme where the profession of research administration fills a gap between capacity and need. According to Benton (1976) the management of interdisciplinary projects both in their initial stage and during the projects lifecycle is a critical component to success and must be recognized as a separate and necessary element. The professional research administrator has been the functional interface for the development and management of interdisciplinary projects.

International Professional Development categorizes data relating to how the profession developed into a practice. The data demonstrate that adoption of western research administration models began occurring with regular frequency in the early part of the 21st century. Early adoption of these models varied depending on the country of origins investment into research and the type of research being conducted at the adoption site.

The Role and Importance of Research Administration in the Organization presents itself as early as the 1970's in the data. The profession of research

administration received attention for its contributions first from internal validation and then from external sources. An emphasis on budget cuts during the recessions of the 1980's receives treatment and attention focusing both on the managerial impact of the profession on research as well as the professions contributions to institutional success.

Professional Survival becomes a sub-code within the data, emerging as the profession beings a series of introspective studies, with a major study published in 2007. The focus of this sub-code is on the professional and how they handle the excessive stress relating to research administration.

Portfolio Management encompasses data relating to how the sum total of all institutional research is developed, strategically planned and managed. The role of the research administrator in this management relates strongly to the developmental, and evolution of the professional sub-codes. **Professional Education/Certification** focuses on articles and data pertaining to the formal training and education, as well as professional certification of the research administrator. This includes both discussions of topics that should be included in the curriculum as well as a general call for support of the Certified Research Administrator (CRA) designation.

The **Evolution of the Profession** sub-code captures data relating to how the profession has evolved overall. This fundamental concept relates to how the overall profession of research administration has developed over time, with the earliest baseline data in the professional literature starting in 1969. **Project Manager** is one of the sub-codes identified that describes an emerging role in the profession. Again, the theme of low capacity versus high demand identified in this analysis is indicated through the

professional research administrator being asked to coordinate both proposals and other special projects relating to research administration and development.

The **Research Administration vs. Gift Administration** sub-code categorizes data relating to the differences between research awards (i.e. money for specific work) and gift awards (i.e. money in support of). The fundamental differences aside, this sub-code captures the elemental differences in the profession of research administration versus those in professions dedicated to a more fundraising profession. **Promotion and Recognition** captures as a sub-code the data relating to how professionals in research administration grow within the field, what a natural course a typical career could look, and the elements relating to recognizing excellence in the field.

The final sub-code identified during analysis is the **Communication Bridge**. This sub-code of the Professional Stem identifies yet another emerging role of the profession. This sub-code is separate from others as communication becomes a critical element in the data pertaining to the overall operations of the research enterprise. As research has grown in complexity, a bridge between the faculty, the administration and the funding agencies has become necessary to facilitate research in a compliant and efficient manner.

Table 2. Hierarchal Organizational Stem – Technical Body of Knowledge

Code: TBK

Definition: Interpretation and application of regulatory, procedural and highly technical issues.

Description: Data focuses on how to do the job of research administration

Sub-Codes of the Technical Body of Knowledge Stem

- TBK1 - Impact of External Factors
- TBK2 - Streamlining/Efficiencies
- TBK3 - Accountability/Institutional Evaluation
- TBK4 - Regulatory Compliance/Navigation
- TBK5 - Cost Share
- TBK6 - Technology Transfer/Patent Rights and Policies
- TBK7 - Intellectual Property
- TBK8 - Research Development
- TBK9 - Technology Application
- TBK10 - Cost Recovery, Centers, Facilities and Administrative Costs
- TBK11 - Organizational Structures
- TBK12 - Industry Partnerships
- TBK13 - Project Management
- TBK14 - Contracting
- TBK15 - Facilities/Shared Resources
- TBK16 - Processing/Work Flow

Major Theme

Policy Follows Process

Hierarchal Organizational Stem Sub-Codes – Technical Body of Knowledge. The **Impact of External Factors** is a major factor in the evolution of research administration. This sub-code deals specifically with the technical impacts that external factors have on the performance of research administration. While several sub-codes in the Technical Body of Knowledge address very specific issues, the data in this sub-code addressed issues such as technology innovations, global politics (the fall of Communism),

recessions and their impact on work flow, funding and administrative procedural development.

The sub-code **Streamlining/Efficiencies** reflects data on how research administrators can functionally reduce the operating costs of offices (primarily central offices) to maximize output, as measured by proposals processed and accounts closed out. Interestingly, instances of seeking new efficiencies appear in the literature immediately following the National Bureau of Economic Research (NBER) designated recessions of November 1973 – March 1975 and the recession of January – July 1980.

Accountability/Institutional Evaluation as a sub-code identifies data relating to the process of providing justification to external agencies on how research dollars are being used. It is not until 1986 that Musewe (1986) discusses specific evaluation techniques that can be used to report individual institutional achievements.

The sub-code **Regulatory Compliance/Navigation** is one of the most dynamic sub-codes identified in the entire study. This sub-code represents a broad based, highly technical, time sensitive data set. While the Office of Management and Budget (OMB) circulars are included, other topics such as debt management, contract management, reporting requirements as well as new compliance and reporting programs are included.

Cost Share as a sub-code has two distinct issues. The first is how to handle cost sharing, and the second is how to measure cost sharing. Cost sharing as a practice can be viewed by some as an intrinsic responsibility that agencies have a right to expect. At the same time, cost sharing can be an administrative hurdle that institutions must overcome to capture the support necessary to engage in research.

Technology Transfer/Patent Rights and Policies represents some fundamental approaches that can guide research administrators in taking technologies developed inside the institution and transitioning them into revenue generating products and services outside of the institution. A complementing component of the Technology transfer/Patent Rights sub-code is the **Intellectual Property** sub-code. Intellectual property captures data relating primarily to policy information and, how to identify and manage intellectual property. As one of the only tangible products that higher education produces in the research enterprise, this sub-code continues to be a highly utilized source of technical reference material.

Research Development emerged as a sub-code with respect to approaches that research administrators can use to partner with faculty in the development new research. One of the major attempts of the data in this sub-code has been to develop a model for the development and management of interdisciplinary research projects. The external expectation to have research cross disciplinary boundaries is as old as the literature itself. To date, no single model exists that can articulate how to manage interdisciplinary research development while simultaneously describing a comprehensive management method.

The sub-code that captures **Technology Application** data examines issues on automation, databases, information systems and new methods of connectivity. With the rise of personal computers during the 1980's and the explosion of the internet in the 1990's, the technical implications of technology on research administration continues to be a highly examined issue.

Given that research administration evolved from business administration, it is not surprising to see the sub code of **Cost Recovery, Centers, Facilities and Administrative Costs**. While research has historically been a major source of funds for institutions of higher education, research administration also focuses on how to maximize the recovery and capture of secondary funds associated with research. Cost recovery and facilities and administrative costs are two major approaches that institutions use to accomplish revenue maximization. Centers, or as they are also referred to as “recharge centers” examine how to capture funds through the establishment of small institutional business that serve a specific research client base.

Organizational Structures represents the data that focuses on the development of various types of research administrative structures. The two most common are research foundations, that operate as independent companies owned by the institution and offices of research administration, which vary greatly depending on institutional capacity and need. **Industry Partnerships** is the sub- code used to categorize data on how to manage the legal and political implications that emerge when institutions engage in work with for profit agencies. While the complexities are numerous, this data set represents a large collection of workable and modifiable templates that research administrators can use in managing their own specific issues.

Project Management represents a small but growing data set that covers a role which almost generalizes the research administration profession. Data in the Project – code contains steps that can be used to outline projects, both for completion and reduction of barriers that may prevent success. Procedurally, research administration is focused on the management of the research. Functionally, research administration is

about filling the void between the “demand for” various institutional needs and the “capacity to” meet those demands given a finite source of resources. The demand for a specific project, research group, initiative usually conflicts with an institutions “capacity to” staff, organize and execute that project. Research Administrators fill that need cleanly, having done so since the earliest days of the profession.

Contracting has become a common place function in the modern research administration office, and the technical complexities surrounding contracting can employ many legal, policy, and statute issues. As a sub-code, this data provides research administrators with a rough guide on how the contracting process can and does impact the institution, how and when to seek legal advice and the overall nature of the contracting process.

Facilities/Shared Resources are a common issue in research and accordingly, have become an issue for the Research Administrator. The development of shared facilities, examples of policy and procedural guidelines as well as management techniques are all described in this sub- code.

Finally, the Technical Body of Knowledge houses **Processing/Work Flow** as the final sub-code. As a technical source, the Processing/Work Flow sub-code examines how the profession has adapted to the changing methods that agencies require for submitting proposals and requests for support. Forty years ago, requests were made on paper; today funding proposals are submitted mostly electronically. Offices of research administration have had to adapt practices, policies and work flow to accommodate the change in how faculty request funds.

Table 3. Hierarchal Organizational Stem – Author Ethnographic

Code: AET

Definition: Opinions, ethnographic descriptions, perspectives and editorials relating to research administration.

Description: Perspectives given by those who practice research administration on topics that are neither specifically profession related no are technically focused.

Sub-Codes of the Author Ethnographic Stem

- AET1 - Industry Partnerships
 - AET2 - Time Management
 - AET3 - Best Practices
 - AET4 - Regulatory Hindrance
 - AET5 - Accomplishing More with Less
 - AET6 - Professional Growth
 - AET7 - Future of Research and Development Administration
 - AET8 - Success Projects
 - AET9 - Perceptions of Research Administration, External Validity and Importance
 - AET10 - Case Studies of Programs
-

Major Theme

Training in the Profession is More Example Based Than Theory Based

Hierarchal Organizational Stem Sub-Codes – Author Ethnographic. **Industry Partnerships** as a sub-code in the Author Ethnographic stem examines the complexities of arrangements with industry and how such arrangements, while necessary to the overall mission of an institution, can erode the institutions policies in order to meet an arrangement.

Time Management has become an issue that Research Administrators focus on as demand for services increase and resources available (particularly human resources) diminish. **Best Practices** encompasses data on the largest variety of topics of any sub-code in any of the three stems. Clearly the primary method for training and

dissemination of skills in the profession is through best practice examples, which are passed from professional to professional through informal means (hands on) as well as through more formalized methodologies, such as mentoring. Data trends towards managing the dynamics of faculty interactions, with office management, industry conflict, and increasing outcomes as other major issues addressed.

Interestingly, **Regulatory Hindrance** is a topic that has received steady attention in the data from 1979 through today. What is interesting about it is that Research Administrators are guardians of regulatory compliance, yet also recognize that such regulatory oversight can impede the research mission. This sub-code highlights that at many times, the effort needed to meet regulatory demands far exceeds the benefits that the regulation actually provides. This issue is in strong agreement with the sub-code **Accomplishing More with Less**, which represents data on the issue of how the profession of research administration has managed its ever increasing workload with at the best of times stagnant, and in normal occurrences dwindling financial, human and physical resources. This sub-code also explores how Research Administrators have leveraged existing resources and technology to innovate how more work can be accomplished with limited resources.

Professional Growth captures the data surrounding various case studies where attempts to establish educational programs in research administration have been made. Not surprisingly, the data show that no unified model for education exists, and the closest model to date is the Certified Research Administrators (CRA) study guide.

The **Future of Research and Development Administration** sub-code is a small collection of retrospective projections for the profession, based on historical demand.

Where the profession is going has been based largely on where it has come from and the demands that those past events have created. **Success Projects** holds data relating to the innovations that Research Administrators have made to meet the demands of their institution in a unique way. While many of those innovations are captured in additional sub-codes, this sub-code is unique by collecting data that is remarkable in its potential for transference from one institution to another.

The **Perceptions of Research Administration, External Validity and Importance** sub-code examine a continuous process of justifying the need for the profession beyond the regulatory, operational, technical and legal functions of the profession. It explores the “what would be” if the profession did not exist and “what should be” as the profession continues to draw resources from other parts of their institution.

The **Case Studies of Programs** sub-code is a collection of numerous programs, some developed by research administrators to advance the work of their institution, the profession, or of some specific need. The applications of these programs range from technology to development, from professional training programs to various workshops and seminars. While this sub-code serves a general collection point for these program reviews, it offers a number of first-hand accounts into the practical work of the Research Administrator.

Table 4. Interrelationship of Sub-Codes and Functional Area of Research Administration (Departmental or Central)

Table 4a. Professional Stem

Code	Description	Dept	Central
PRF1	Mediator/Expediter	X	X
PRF2	Research Development	X	X
PRF3	Mediator/Regulator		X
PRF4	Electronic Research Administration (ERA) and the Profession		X
PRF5	Evaluation		X
PRF6	Research Administration as a Catalyst	X	X
PRF7	International Professional Development		X
PRF8	Role/Importance of Research Administration in the Organization		X
PRF9	Professional Survival		X
PRF10	Portfolio Management		X
PRF11	Professional Education/Certification	X	X
PRF12	Evolution of the Profession	X	X
PRF13	Project Manager	X	X
PRF14	Research Administration vs. Gift Administration		X
PRF15	Promotion and Recognition	X	X
PRF16	Communication Bridge	X	X

Table 4b. Technical Body Of Knowledge Stem

Code	Description	Dept	Central
TBK1	Industry Partnerships		X
TBK2	Streamlining/Efficiencies		X
TBK3	Accountability/Institutional Evaluation		X
TBK4	Regulatory Compliance/Navigation	X	X
TBK5	Cost Share		X
TBK6	Technology Transfer/Patent Rights and Policies		X
TBK7	Intellectual Property		X
TBK8	Research Development	X	X
TBK9	Technology Application	X	X
TBK10	Cost Recovery, Centers, Facilities and Administrative Costs	X	X
TBK11	Organizational Structures	X	X
TBK12	Industry Partnerships		X
TBK13	Project Management	X	X
TBK14	Contracting		X
TBK15	Facilities/Shared Resources	X	X
TBK16	Processing/Work Flow		X

Table 4 - Continued

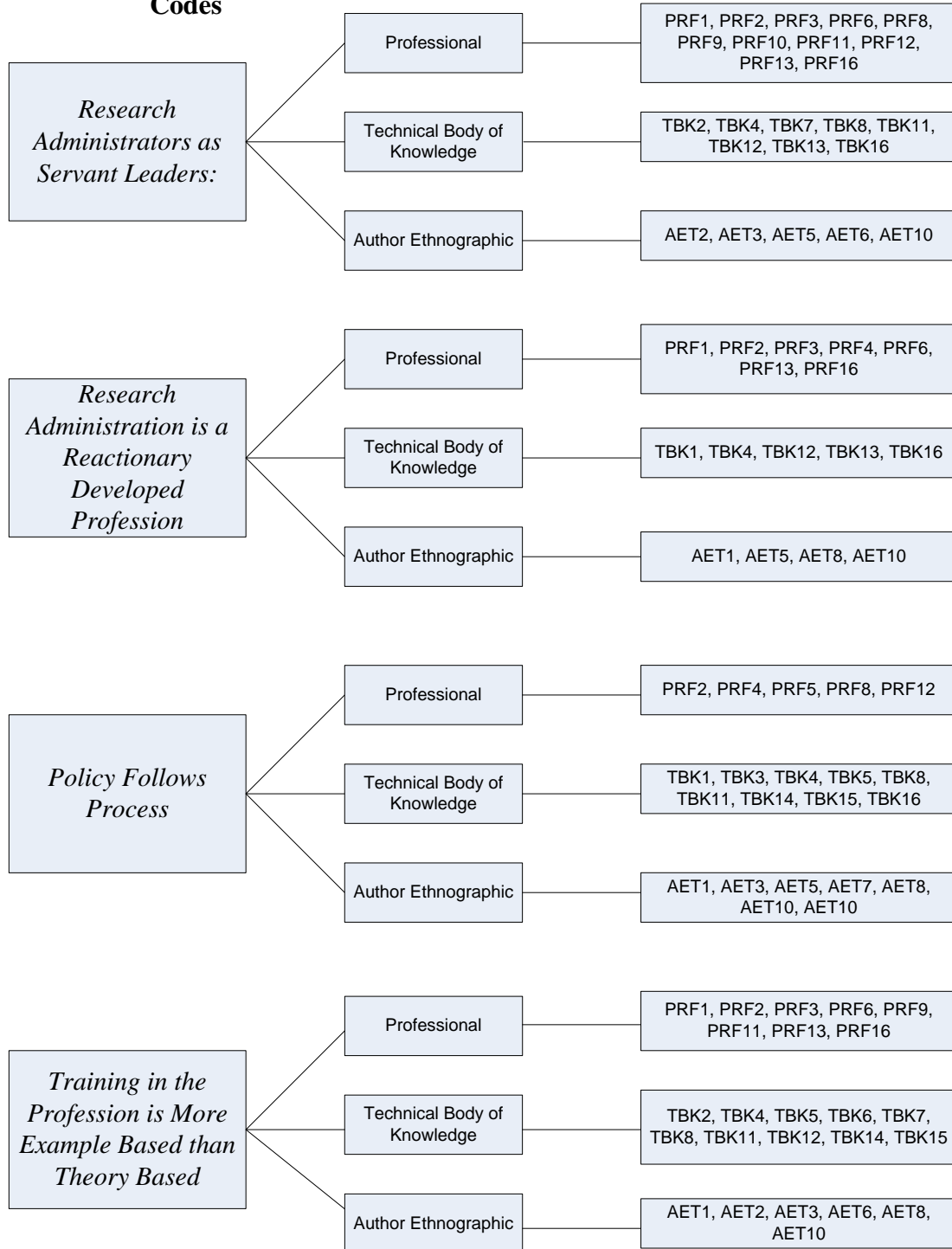
Table 4c. Author Ethnographic Stem

Code	Description	Dept	Central
AET1	Industry Partnerships		X
AET2	Time Management	X	X
AET3	Best Practices	X	X
AET4	Regulatory Hindrance	X	X
AET5	Accomplishing More with Less	X	X
AET6	Professional Growth	X	X
AET7	Future of Research and Development Administration	X	X
AET8	Success Projects	X	X
AET9	Perceptions of Research Administration, External Validity and Importance	X	X
AET10	Case Studies of Programs	X	X

Figure 1. Matrix of Persistent and Emerging Thematic Elements by Era

Era	Persistent Themes (by era)	Emerging Themes (by era)
Expansion Era 1940-1960	<ul style="list-style-type: none"> • Definition of the research administrative role • Research Administrator as functionary duties • Growth of regulatory oversight and demand • Faculty Focused 	<ul style="list-style-type: none"> • Research Administrators as full time occupations • Early discussions about the profession
Transition Era 1960-1980	<ul style="list-style-type: none"> • Research Managers to Research Administrators • Increased Need for Communication • Continued demand for accountability 	<ul style="list-style-type: none"> • Focusing and Streamlining of operations • Early evaluative models for research productivity
Para-Professional Era 1980-1990	<ul style="list-style-type: none"> • Research Administrators as internal regulators • Enhanced Emphasis on Performance • Research Administrators as bridges between need and capacity • Performance Focused 	<ul style="list-style-type: none"> • Project Managers • Continued requirements for rapidly expanding research • Different types of Research Administrators
Independent Professional Era 1990-2009	<ul style="list-style-type: none"> • Profession recognized both internally and externally as independent • Organizational Structures now identify research administration as a function not a set of duties • Rapid expansion of regulatory demands • Professional self interest through research and education • Identification of professional barriers 	<ul style="list-style-type: none"> • Special Project Managers • Portfolio management • Research development, institutional focus • Life span of the practitioner

Figure 2. Taxonomy of Identified Major Themes, Hierarchical Stems and Sub-Codes



CHAPTER FIVE

DISCUSSION AND FUTURE RESEARCH

It is clear through the data, that the profession of research administration is complex. Given the increasing complexity and scope of work associated with research today and the efforts necessary to ensure proper administration of that research, the results of this study provide a new and incremental understanding into the construction of the professions past and possible future directions for research administration.

The analysis of the data resulted in the identification of forty-two elemental sub-codes using the hierarchical stems as described in Chapter Three. By identifying the categorical sub-codes that make up the elemental foundation of research administration and through subsequent identification of the major thematic elements in the profession, we now have a more structured understanding of the profession. By analyzing the major themes in the context of the identified eras of the profession and examining the persistent and emerging themes by those identified eras, we can make an assessment of what research and future work may be necessary to support the continued evolution of the profession of research administration. Finally, to address the identified necessary work and research for the profession, a series of recommendations are made that address how research administration could achieve continued growth and success as a profession.

To fully identify and validate any themes in the literature, the Taxonomy of identified major themes, hierarchical stems and sub-codes (Figure 2) is examined in conjunction with the persistent and emerging themes described in the matrix of persistent and emerging thematic elements by era (Figure 1). Using the sub-codes and the date of

the relative publications that comprise them, a structural schema was discovered that outlines how the profession evolved using a new set of functional eras. These eras differ from those provided in earlier works in that the eras identified in this study examine the influences of how the profession came to be, whereas the eras described by Beasley (2006) outline why the profession came into existence. The term “persistent” in the identified functional areas describes data that presents itself as remarkable or non-isolated throughout the given time frame of that era. The term “emerging” in the identified eras describes data that may present itself with greater frequency but may do so near the end of the particular era and or may appear as a supporting concept. Using basic qualitative analysis techniques, the identified functional eras illustrate the evolutionary professional direction of research administration. These new eras also provide a conceptual framework to analyze the Taxonomy (Figure 2), and ultimately validate the identified major themes in the literature.

Discussed first are eras identified in this study; the Expansion era, the Transition era, the Para-Professional era and the Independent Professional Era. Following that is a discussion of the major themes identified in the literature.

Persistent and Emerging Thematic Elements by Era

Expansion Era – 1940-1960. During this era, the profession of managing research began to expand in conjunction with the growth of federally funded research. During this era, the definition of the research administrative role in the organization was a major focus in the literature. It is important to note that throughout this era, the duties associated with research administration were considered component elements of other positions. It took major events such as the creation of the National Institutes of Health in

1952 to nationally highlight the demand for regulatory oversight that would be the driving factor in taking the research administration functions from part time duties to full time occupations.

Transition Era – 1960-1980. The full-time occupation that many of the earliest research administrators held was that of a Research Manager (Beasley 2006). During the Transition era, those managers began to see their duties expanded and as a result began to call themselves Research Administrators. While this may be seen as simply a matter of semantics, the change in name represents a more broad-based generalization of the increased duties that professional research administrators were being assigned. As funding for research began to increase dramatically during this era (National Science Foundation 2010) and disciplinary boundaries in the academy broadened to meet the growing demands of new students and new research questions, there was a need for both additional accountability on how new resources for research and student education were being used as well as a need for increased communication between faculty and central administrators regarding the growing research enterprise. As the Transition Era progressed, there was an emergent need for research administration to begin to streamline operations and evaluate the institutional research productivity by exploring models of evaluation.

Para-Professional Era – 1980-1990. The Para-Professional era represents a major shift in the focus of research administration. Driven again by external demands for accountability, the research administrators focus during this era shifted from a purely faculty focused approach to performance-minded, and by extension, institutionally focused approach. With the explosive growth of biomedical research during the 1980's

and 1990's (Brandt, 1987; Liao & Wright, 1987) the regulatory compliance needs far outweighed the capacity that faculty and non-research administrators could fill. While biomedical research is one example of how need exceeded capacity, the concept that Research Administrators begin to serve as bridges to fill that gap between need and capacity extends to several other areas. Special projects, new initiatives and measuring performance are all identified in this era as functions that research administration was called upon to address in regular fashion. Also during this era, there was the creation of different types of research administrators as the functional duties and responsibilities became more specialized. It was during this period that the early separation of the central and the departmental research administrator presents itself in the data.

Independent Professional Era – 1990 – 2009. This era demonstrates that the profession of research administration has evolved into a truly separate profession. Recognized both internally and externally by peers, professionals and societies (Brandt, 1997b; Kirby, 1995; White, 1991) research administration now represents a critical link in the overall research enterprise of many educational and non-educational institutions. While funds for research are available from a variety of public and private sources, the predominate source of funds comes from public sources. According to the National Science Foundation, in 2009 over 50 billion dollars was awarded to support research in the United States. By law and policy, a research administrator must be in place at institutions receiving those funds. The establishment of this major function represents a radical shift from the early days of research administration where a professional had a set of duties that included, in part, research management. Today, those research administrative duties represent a fully independent profession. Following the events of

September 11, 2001, the expansion of regulatory demands accelerated at a pace unseen since the early 1980's. This increase in the availability of funds to conduct, the evolution of the research administrators role in higher education and the continued rise in regulatory oversight has forced professional societies and practitioners of research administration to examine the internal workings of the profession from both a regulatory and an operational perspective.

While this internal-professional examination continues, it is clear that addressing how to train new research administrators in a more formal manner is becoming a critical component to the long term sustainability of the research administration profession. Research administration as a profession has also begun to identify professional barriers and expand the nature of the scholarly work into the profession that focuses on new research possibilities as well as professional inquiry into the health and wellbeing of practitioners. During this era, there is a renewed and newly focused effort for research administrators to engage in new research, taking the institutional focus and developing strategies to bolster the performance of the institutional research portfolio while supporting faculty researchers in the independent and collaborative endeavors that are a major focus of funding agencies.

What Are The Major Themes in the Literature Dedicated to Research Administration?

The data demonstrate that there are four major themes in the literature that cross all eras and connect with all three of the hierarchal organizational stems. These findings are also triangulated with the analysis of sub-codes as they related to functional type of research administrator to ensure that identified themes are representative of the

profession as a whole. These four identified themes are (1) Research Administrators are Servant Leaders; (2) Research Administration is a Reactionary Profession; (3) Policy Follows Process and (4) Training is More Example Based than Theory Based.

Research Administrators as Servant Leaders. The concept that a servant leader is someone who puts the needs of others first, making those needs their highest priority (Greenleaf, 1991) is highly applicable to research administration. The data demonstrate that as a profession, research administrators focus their efforts on complementing the work of researchers so that research may be executed in a manner that is allowable by law and manageable by policy. The data further illustrate that as the profession of research administration has matured, leadership at the highest levels in the institution has become a larger part of the professional research administrator's activities. Summarized best by Vargas and Hanlon (2007), "As research administrators, we must serve as a resource to our researchers. At the same time, we must provide the leadership required to allow us to fulfill this servant function without impeding the advancement of research" (p. 45).

Research Administration is a Reactionary Developed Profession. Throughout the data, numerous examples are presented regarding why the profession of research administration evolved as it did. It is clear that research administration exists as a result of external demands placed on institutions (and by extension the faculty) by funding agencies for accountability, management and reporting of funded research. Beasley (2006) outlines most succinctly how the profession originated at the centralized level and grew from business affairs individuals who were asked to handle the increased regulatory requirements that were becoming attached to research awards. As professional societies

developed, the topics of professional meetings, conferences and activities were in response to member's interests at the time, not in anticipation of future needs and demands. Mooney (1984) and Foutty (1995) both use their retrospective experiences on the profession to develop a perspective on what the profession might be in the future. Time and again, the data show how research administration reacts to issues and needs, clearly illustrating this to be a central theme in the literature.

Policy Follows Process. Complementing the themes that research administration is a reactionary developed profession inhabited by servant leaders, the data show that in the application of the profession, policy follows process. As research administrators are called upon to meet the management and facilitation demands of institutions for special projects, are asked to advise faculty on regulatory navigation, or are tasked with the responsibility for monitoring research activities to ensure compliance, the need to accomplish the work has always predated a policy to enforce that process. Many times throughout the data, a policy is developed after the crisis of the moment has been averted. As external factors such as when new federal regulations are imposed, the institution addresses those external demands first and then develops a policy to handle future occurrences. One example of recent relevance is the American Reinvestment and Recovery Act (ARRA) of 2009. Signed into law on February 17, 2009, ARRA was designed to infuse over 235 billion dollars into the research community. When the research community responded there was limited discussion of the reporting requirements. The activity emphasis was on supporting faculty in the pursuit of these new resources. After the projects funded under ARRA were initiated, the institutions began to receive notices for reporting from the respective funding agencies of the

government. These notices had a short time frame for response by the institutions and it fell to the research administrators to work with faculty to meet those reporting requirements. Only after the first wave of reports was transmitted have institutions begin to develop policies for data collection future reporting relating to ARRA funding. Once again, the theme of policy follows process is illustrated.

Training in the Profession is More Example Based Than Theory Based.

Throughout the literature it is evident that no unified educational curriculum exists as a comprehensive research administrator training program. While the Research Administrators Certification Council (RACC) offers a professional designation of Certified Research Administrator (CRA) the RACC (2010) also states that it is through both fundamental knowledge and testing that someone can sit for the CRA exam. The certification exam does not provide a formalized curriculum delivery model; rather it is up to individual students to acquire the source material and prepare on their own. Coupled with the repeated calls for education and certification in the literature (Carole, 2002; Chermiside, 1991; Eyerly, Killoren, Meyer, Erwin, & et al., 1993; Lowry, 1983; Nixon & Rogers, 1990; Patton, 1988; Stockton & Krebs, 1976) is a strong common element. While education, certification and training are necessary to the success of the research administrator, those training programs are conducted informally, through example based delivery and situational need. From a theory based standpoint, the profession has not yet evolved to the point where a universal theory for general education in research administration can be developed. Medical schools train their research administrators differently than agricultural schools. Internal operational structure also plays a role in determining the learning environment.

What Could The Next 10 Years of the Profession Look Like

Historically, future projections about research administration have utilized a retrospective approach. Using an ethnographic approach, research administrators such as Mooney (1984) and Foutty (1995) have attempted to use their own experiences and perspectives to address what the future may hold. Upon review of the data and the major identified themes, the next ten years of the profession of research administration could entail the further development of the scholarly aspects of the profession. Starting with the development of both a formalized curriculum and delivery model, research administration in the next ten years will, in order to compensate for the growing number of soon to be retirees, have to formalize a standard curriculum to introduce new professionals into the field. This curriculum will be absent of any specific institutional or functional foci; rather it will be a generalized body of knowledge that can be applied in any situation. One possible delivery model could be as a component of the Certified Research Administrators program, where an individual could also be certified to teach research administration as well as practice in the profession. The call for a collegiate program in research administration is not new. Chermiside (1991) calls upon professional societies and the profession of research administration in general to develop and train research administrators. Such programs would have to be at the master's and doctoral levels to ensure that adequate research into the field was conducted. In what could be described as the New Scholarly Era, education and scholarly research about the profession will be of primary importance.

As graduate programs in research administration develop, it is natural that scholarly research about the profession will also develop. With potential research areas

in business, law organizational management, and personnel management, there is a great depth from which to draw new research questions and studies with a research administrative focus. Given the limited number of formal studies conducted about research administration to date, it is reasonable that new studies on the profession will be conducted as more formal educational models in the academy are formed.

As a profession that has been primarily reactionary in nature, this new research into the profession will also entail a new approach to the profession in general. With available non-research funding for administration dwindling in the academy which in turn causes activities seeking external research funding to become more competitive, the Professional Research Administrator will be established as new type of professional. This new professional will fill the emerging void created between lack of institutional resources to support research administration and the increased workload resulting from increased demand by researchers and institutions seeking to replace those operational dollars through research and operational overhead recovery. With the traditional roles of central and departmental professionals already established, the new Developmental Research Administrator will be a truly new breed of professional who will be entirely proactive in identifying and developing new research initiatives as a part of their managing the research portfolio of the institution. This new professional will be versed in the general aspects of research administration and will most likely evolve from the central research administrator. The focus of this individuals work will be on the development of new research, not on the specific faculty or institutional agendas. While many could argue that this type of professional exists in the form of Vice Presidents for Research, the developmental research administrator will in fact be a front line

administrator. They will have an understanding of regulatory and technical issues so as to guide the research faculty and faculty teams as they develop new programs. Yet, a Developmental Research Administrator will not manage the day to day technical aspects of regulatory compliance. Nor will the Developmental Research Administrator focus on the day to day operations of research. Instead this new type of research administrator will focus on helping to develop programs that are operationally feasible. Once the new program is initiated, the Developmental Research Administrator will move on to a developing a new program.

Summary and Recommendations for Future Work in the Profession

Research administration as a profession was established and has grown as a direct result of external factors coupled with the energies of highly dedicated servant leaders. As a service profession, research administration is more technical and solution oriented than process based. As a relatively new profession, research administration has not yet established the fundamental and universally accepted curriculum that is necessary to train future research administrators. Furthermore, as a result of research administration being solution driven, and in the absence of a unified educational model, the professional literature dedicated to the profession is extensively broad, but does not address potential future issues that may face the profession. The ability of the professional research administrator to continue serving those who conduct research is now in conflict with the evolutionary stage that research administration now finds itself in. A reactionary approach is insufficient to provide the levels of support necessary to ensure that research administrators can continue to meet the regulatory demands of today's funding agencies and the increased pressures to support the research faculty. By responding to demands

instead of proactively seeking new approaches to challenges, solutions, policies and processes through scholarly inquiry, research administrators will be placed into a position that will focus less on enabling research and instead will cause the profession of research administration to become a true hindrance to the research enterprise. The profession must continue to strive for a clear and comprehensive training and education program so that as a profession, research administration has a common starting point for all practitioners, new and seasoned. New scholarly emphasis must be placed on the profession to become proactive in policy development and practice so that research administrators are prepared to meet the growing demands of those that the profession serves.

Potential Future Research

Recommendation 1: Develop a unified theoretical model of research administration education. A unified theoretical model for research administration education is critical to the long term success of the profession. Additional research and formalization, as agreed upon by the two major organizations dedicated to research administration, should be the top priority of the profession. While this unified theoretical model should culminate at the graduate level, a formal degree that is not functionally (biomedical, agricultural) specific should exist. Such programs could be housed in either colleges of Business or Education, as the focus of research administration fits well with the generalized objectives of such colleges. Regardless of the academic home for such a degree program and curriculum, research administration can grow from a generalized profession into one that conducts advanced scholarly work as a matter of practice and inquiry rather than in response to needs or post hoc projects.

Recommendation 2: Establish professional and legal guidelines for the practice of research administration. A new study should be developed to examine from the perspective of research administrators at all levels, what the perceived needs of the next era will be. Such a study should also examine the methodologies of how interpretation of regulations and the application of work is conducted. As a mixed methods meta-analysis, data of this nature on the profession could provide the basis for the development of new professional policies and standards. Similar to the General Accounting Standards Board (GASB) or Generally Accepted Accounting Principles (GAAP), this collection of accepted principles for research administration (APRA) would provide a standardization to how regulatory guidelines are to be interpreted, formalize evaluation models for

research productivity and achieve the national level of oversight that the profession will need as it begins to conduct more regular scholarly work and evolve into the next era as a profession dedicated to excellence in proactive, supportive research administration.

Recommendation 3: Establish an oversight body for research administration.

Beyond those established by the Society of Research Administrators International (SRA) and the National Council of University Research Administrators (NCURA), the profession should establish a non-affiliated oversight body that would house and administer the Certified Research Administrators designation, publish a set of Accepted Principles of Research Administration (APRA) and serve as the national and international focal point for general research administration as a profession. Since SRA and NCURA each have a specific focus for their respective organizations, a professional oversight body would allow each organization to focus on the interests of their respective members while providing grounding for the profession regardless of specific practice.

As the academy moves into the next generation of research and practice, there is an opportunity to introduce a new line of scholarly inquiry into the academy, one that provides perspective about the role, importance and functions of research administration. This study should be considered as a potential next step in understanding and supporting the role and evolution of the profession of research administration in higher education and beyond.

REFERENCES

- Atkinson, T. E., Gilleland, D. P., & Barrett, T. P. (2007). The dimensions of influence on research administrator behavior: toward a theoretical model of research administration as a public service profession. *Journal of Research Administration*, 38.
- Benton, D. A. (1976). Management and effectiveness measures for interdisciplinary research. *Journal of the Society of Research Administrators*, 7(4), 37.
- Bernard, H. R. (1994). *Research methods in anthropology: qualitative and quantitative approaches* (2nd ed.). Thousand Oaks, CA: Sage Publications.
- Beasley, K. L. (2006). The history of research administration in *Research Administration and Management* (p. 9-27). Sudbury, Mass.: Jones and Bartlett.
- Birnbaum, R. (1988). *How colleges work : the cybernetics of academic organization and leadership* (1st ed.). San Francisco: Jossey-Bass.
- Bowonder, B. (1980). The research manager and his roles. *Journal of the Society of Research Administrators*, 12(1), 17.
- Brandt, E. N. (1987). Research administration in a time of change. *Journal of the Society of Research Administrators*, 19(2), 5.
- Brandt, E. N. (1997a). Research administration in a time of change. *SRA Journal*, 29(1/2).
- Brandt, E. N. (1997b). Research administration in a time of change. *SRA Journal*, 29(1/2), 33.
- Brown, M. C. (2000). *Organization & governance in higher education*. Boston, MA: Pearson Custom Pub.

- Bush, V. (1945). *Science, the endless frontier. A report to the President*. Washington,: U.S. Govt. print. off.
- Butler, D. (2000). Sweden streamlines research administration. *Nature*, 406(6792).
- Carole, W. (2002). Developing effective training programs. *Journal of Research Administration*, 33(2), 77.
- Cassell, C., & Symon, G. (2004). *Essential Guide to Qualitative ethods in Organizational Research*. London: Sage Publications Ltd. .
- Chermside, H. B. (1991). Education for research administrators: where to go from here. *Journal of the Society of Research Administrators*, 23(3), 13.
- Cole, S. P. (2007). Research administration as a living system. *Journal of Research Administration*, 38.
- Collinson, J. A. (2007). "Get yourself some nice, neat, matching box files!" Research administrators and occupational identity work. *Studies in Higher Education*, 32(3), 295-309.
- Cosico, J. (2006). The legacy of a colleague: reflecting on who we are and what we do. *Journal of Research Administration*, 37(1/2).
- Creswell, J. (2007). *Second Edition Qualitative Inquiry & Research Design Choosing Among Five Approaches*. Los Angeles: Sage.
- Duryea, E. D. (2000). Evolution of university organization. In M. C. Brown (Ed.), *Organization and Governance in Higher Educatrion*.
- Eyerly, R. W., Killoren, R., Meyer, R. C., Erwin, R. L., & et al. (1993). Developing an in-house training program for research administration. *SRA Journal*, 25(1), 31.

- Fairweather, J. S. (2002). The mythologies of faculty productivity: implications for institutional policy and decision making. *Journal of Higher Education*, 73(1), 26-48.
- Flick, U. (2009). *An Introduction to Qualitative Research*. Los Angeles: Sage.
- Flick, U., Kvale, S., Angrosino, M. V., Barbour, R. S., Banks, M., Gibbs, G., et al. (2007). *The Sage qualitative research kit*. London: SAGE.
- Foutty, J. (1995). Administration in the research environment--a new perspective. *SRA Journal*, 27(2).
- Gabriele, E. F. (1998). The struggle for shape and substance: A metaphor for the emerging identity of the research administrator. *SRA Journal*, 30(1/2).
- Greenleaf, R. K. (1991). *Servant leadership : a journey into the nature of legitimate power and greatness*. New York: Paulist Press.
- Hansen, S. L., & Shisler, C. (1992). Research administration reconsidered. *Research Management Review*, 6(2), 49-55.
- Kerwin, L. (1982). The research administrator: shield and promoter. *Journal of the Society of Research Administrators*, 13(4), 5.
- Kirby, W. S. (1995). Understanding and managing sponsored research administration as a system. *SRA Journal*, 27(3/4), 25.
- Kulakowski, E., & Chronister, L. (2006). *Research administration and management*. Sudbury, Mass.: Jones and Bartlett.
- Landen, M., & McCallister, M. (2002). Evolution or revolution? examining change in research administration. *Journal of Research Administration*, 33(3).

- Langley, D., & Oforu, M. (2007). Celebrating a profession: The global perspective. *Journal of Research Administration, 38*.
- Lasker, L., & Morris, T. M. (1992). Research Administration: What is it - fact or fiction. *SRA Journal, 24*(1).
- Liao, Y., & Wright, A. E. (1987). The necessity of animals in biomedical research/in defense of animal use in research. *Journal of the Society of Research Administrators, 19*(1), 31.
- Lowry, P. S. (1983). On-the-Job training for the new university research administrator. *Journal of the Society of Research Administrators, 15*(2), 21.
- Miles, M., & Huberman, M. (1994). *An Expanded Sourcebook; Qualitative Data Analysis*. London: Sage Publishing.
- Mooney, R. L. (1984). Administration in the research environment - the provider's perspective. *Journal of the Society of Research Administrators, 16*(2), 5.
- Musewe, V. O. (1986). A review of bases for evaluating the performance of agricultural research institutions. *Journal of the Society of Research Administrators, 18*(1), 13.
- Myers, P. P. (2007). Celebrating the first forty years of the Society of Research Administrators International. *Journal of Research Administration, 38*.
- Myers, P. P., & Smith, M. C. (2008a). Research administration in history: The development of OMB Circular A-110 through Joseph Warner's COGR Subcommittee, 1976-1979. *Journal of Research Administration, 39*(2).
- Myers, P. P., & Smith, M. C. (2008b). Research Administration in History: The Development of OMB Circular A-110 through Joseph Warner's COGR Subcommittee, 1976-1979. *Journal of Research Administration, 39*(2), 15.

- National Science Foundation (2010). SRS Academic Research and Development Expenditures: Fiscal Year 2007 - US National Science Foundation (NSF). (n.d.). *nsf.gov - National Science Foundation - US National Science Foundation (NSF)*. Retrieved February 3, 2010, from http://www.nsf.gov/statistics/nsf09303/content.cfm?pub_id=3871&id=2
- NCURA - Author Instructions. *Welcome to NCURA - National Council of University Research Administrators*. n.p., n.d. Web. 5 Feb. 2010. <http://www.ncura.edu/content/news/rmr/author_instructions.php>.
- Nicholsen, R. (1969). History of the Society of Research Administrators. *SRA Journal*, 1(1).
- Nixon, R. A., & Rogers, J. M. (1990). Argument for Research Administrator Certification; Certification: Can we afford it? (So Much to Do for So Few). *Journal of the Society of Research Administrators*, 22(2), 27.
- Norris, J., & Youngers, J. (2000). Sponsored programs offices in higher education: A continuing evolution responding to federal requirements. Washington, DC.
- Patton, L. W. (1988). Establishment of graduate student research administration programs. *Journal of the Society of Research Administrators*, 20(2), 15.
- Rodman, J. A. (1983). Organizational models and staffing responsibilities for sponsored projects offices. *Journal of the Society of Research Administrators*, 14(4), 33.
- Society of Research Administrators (2010). Guidelines for Authors,. *Journal of Research Administration*
- Shelley, L. (2009). Research managers uncovered: changing roles and "shifting arenas" in the academy. *Higher Education Quarterly*, 64(1), 41-64.

- Shisler, C. L., Dingerson, M. R., & Eveslage, S. A. (1988). Research administration organizations, practitioner characteristics. *Journal of the Society of Research Administrators, 20*(1).
- Sink, J. D. (1985). Academic Research: The faculty's role and responsibility. *Journal of the Society of Research Administrators, 16*(4), 19.
- Stein, R. B., & Fajen, A. L. (1995). Development of evaluation indicators: three universities of the Texas A&M system. *New Directions for Higher Education*.
- Stockton, R., & Krebs, R. E. (1976). Characteristics, responsibilities and training needs of the research administrator. *Journal of the Society of Research Administrators, 8*(2), 3.
- Streharsky, C., & Smith, C. (2002). Consider the stakeholders in research administration. *Journal of Research Administration, 33*(2).
- Trainer, J. F. (2008). The role of institutional research in conducting comparative analysis of peers. *New Directions for Higher Education*.
- Vargas, P., & Hanlon, J. (2007). Celebrating a profession: the servant leadership perspective. *Journal of Research Administration, 38*, 45.
- Weick, K. E. (1976). Educational organizations as loosely coupled systems. *Administrative Science Quarterly, 21*(1), 1-19.
- White, V. P. (1991). The paradoxical role of the research administrator. *Journal of the Society of Research Administrators, 23*(3), 7.
- Zachary, G. P. (1997). *Endless frontier : Vannevar Bush, engineer of the American Century*. New York: Free Press.

APPENDIX A

Determination of Study's Applicability under 45 CFR 46

Washington State University

Institutional Review Board

Human Subjects Memo

From: Conner, Patrick Sheyne [mailto:patrick_conner@wsu.edu]
Sent: Wednesday, February 10, 2010 11:58 AM
To: Campbell, Daniel
Subject: RE: IRB Documentation

Daniel,

The Office of Human Research Protections (OHRP), at 45 CFR 46.102(f), defines *Human Subject* as:

“a living individual about whom an investigator (whether professional or student) conducting research obtains

- (1) Data through intervention or interaction with the individual, or
- (2) Identifiable private information.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes. *Interaction* includes communication or interpersonal contact between investigator and subject. *Private information* includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.”

As you are collecting you study data from publicly-available archived sources, which, per our earlier conversations, contain no information that identifies individuals, it meets neither of these conditions, and, therefore, does not involve human subjects. There is no need to obtain IRB approval or certification of exemption.

Sincerely,

Patrick Conner
patrick_conner@wsu.edu

From: Campbell, Daniel [mailto:dcampbell@uidaho.edu]
Sent: Wednesday, February 10, 2010 11:49 AM
To: Conner, Patrick Sheyne
Subject: IRB Documentation

Patrick,

As we discussed last week, I need to document that my thesis project does not involve human subjects. Using the Exemption Determination Application provided on the WSU IRB website, the following three questions are presented. I am attaching my answers for you to confirm that I have answered appropriately.

1. Is the data being obtained about living individuals, directly or indirectly?
Answer: No, the data being collected utilizes peer reviewed articles in major journals available in the public domain.
2. Is the data collected through intervention or interactions with the individuals
Answer: No, the collection of the data will not involve interventions or interaction with any person(s).
3. Does the data contain identifiable private information?
Answer: No, the information being collected is from journal articles and references only.

I am also including a brief overview of what the project entails. Goal (b) builds upon Goal (a) to make a prediction about the profession in what will be the analysis section of my thesis.

“This thesis utilizes a thematic analysis design to examine the unified literature base of the two peer reviewed journals dedicated to the profession of research administration. The goals of this study are to (a) identify the major themes in the literature dedicated to research administration, and using that thematic analysis, project (b) what could the next ten years of the profession look like?”

With all of this in mind, could you please review the above information, and if no IRB is required, please respond via email as documentation that the proposed work does not involve human subjects and does not require IRB review.

Thank you,

Daniel Campbell