Profile of the Chief Research Officer at Major Research Universities in the United States and Examination of the Current Pathways to the Position

Julie A. Nash
Montreat College

Dianne A. Wright
Florida Atlantic University

Abstract: *A study to construct a profile of the Chief Research Officer (CRO) was conducted through aggregation of data through a survey instrument distributed to CROs at 240 Carnegie Classified research institutions. Resumes of CROs were voluntarily submitted and job descriptions were obtained and content analyzed. The career pathways and the profile of the CRO are described based on the data collected. The data revealed that the CRO typically is a white male, over 50 years of age, married with children, holds a terminal degree and makes over $100,000 per year. Four career pathways were determined to exist. The least traveled pathway to the position of CRO was found to be through lower level staff positions occupied by individuals simply progressing through the ranks of research administration within the higher education institution's research office. The most often traveled career path to the position of CRO was found to be the academic pathway.*

Keywords: *Research Administrator, Career Pathways, Chief Research Officer, Higher Education Administration*

Introduction

Research is a core mission of the public university (Duderstadt & Womack, 2004) along with teaching and learning. University research is a vital building block of the nation's research and development enterprise. "Universities performed 56 percent of the nation's basic research in 2008, or about $39 billion of the national total of $69 billion. For applied research, universities performed 12 percent of the nation's total in 2008, or about $11 billion of the national total of $89 billion." (Association of American Universities, 2011). As the universities dependence on research and development has expanded, the need for competent managers and leaders of the enterprise has grown concomitantly. Most universities have centralized the leadership and management of research in a central office of research led by a chief research officer (CRO) (Kulakowski & Chronister, 2006) The CRO carries titles such as the Vice President for Research, the Vice Chancellor for Research or the Vice Provost for Research and reports directly, in most cases, to the president of the university. The CRO plays a key role in the university setting. The purpose of this study was to examine the profile of the CRO and the pathway that they pursued to obtain this position which is vital to the success of the research institution. The CRO is part of the senior leadership and management team of the university with significant financial and legal responsibilities. The position is typically the institutional official as defined

by the Office for Human Research Protections to ensure compliance to the Federal, State and university rules and regulations regarding health, safety, and the responsible conduct of research as well as institutional business administrator as defined by the National Institutes of Health.

The position of CRO is relatively new within higher education. Institutions of Higher Education saw an increase in bureaucracy and administration during the transformation period (1870-1944) as accrediting and professional associations and legislative acts demanded it (Cohen, 1998). Moving into the mass higher education era (1945-1975), the need for more administrators increased. A simultaneous increase in research occurred during this time period (Cohen, 1998; Slaughter & Leslie, 1997) due, in large part, to the ongoing cold war (e.g. research going into defense weaponry) many of those research dollars were coming to universities. As a result, funding provided by federal dollars flowed into universities for facilities, professional study, financial aid, libraries and instructional improvement. In fact, according to Cohen, the rate of administrators increased to a greater extent during this period than those of students and faculty (Cohen, 1998). The funding of research also resulted in many universities being perceived as more prestigious (Cohen, 1998).

These "research" Universities, as they came to be known, continued to grow in the contemporary period (1976-1998) as their prestige increased (Cohen, 1998). Subsequently, research offices were created and offices that were once just small units for sponsored research transformed into Divisions. The CRO is responsible for the professional research administrators within the Division of Research at major research universities. Divisions of Research at many higher education institutions, where the CRO resides, oversee large amounts of research funding. Unfortunately however, to date, no empirical research has been conducted describing the profile of the CRO or the career ascension to this role.

Roberts and House (2006) conducted the first empirical research that profiled the "research administrator" in general, however the position of CRO was included but could not be extracted from the combined data. Their data was gathered using a survey protocol, and was restricted to research administrators in the southeastern United States. The information collected focused on age, educational level, classification of position, salary range and how respondents initially became involved in the field of research administration. The basic profile reported was that most research administrators in general are female, 40-49 years of age, bachelor's degree with 6-10 years in the profession. They earn between $40,000 – 50,000 per year (Roberts & House 2006). Shambrook and Roberts (2010) expanded on the original survey by Roberts and House and gathered much of the same profile information plus some additional social information including; additional employment, children in the home, house cleaning duties, taking care of elderly, coursework or volunteer activities. This time however, the data was gathered nationwide from research administrators who were members of the National Council of Research Administrators (NCURA) and compared to the previous research. Shambrook and Roberts found a significantly higher salary range of $50,000 – $74,999 and the majority of research administrators were found to hold masters and bachelor degrees. While the information on the administrative roles were requested, the senior position of CRO was not one of the designated roles. Consequently, there is no published data on the roles, responsibilities and background

(e.g. educational achievement) of the CRO from a survey of these professionals. The current study was conducted to address this lack of information for the position of CRO and to add to the body of research relating to persons involved in the administration of university research.

Contrary to the dearth of studies found in the literature related to the research administrator, several studies have been conducted on pathways to the Presidency, and though they may describe, by default in some cases, the pathway to some vice presidencies, these descriptions have not described the pathway to the position of CRO. More specifically, reported data from major sources such as the *American Council on Education (ACE)* and the *College and University Professional Association for Human Resources* does not separate the CRO from other central academic officers. Rather the CRO is combined in the data with individuals holding titles of Chief Health Professions Officer, Dean of Continuing Education, Dean of Graduate Programs, Dean of Instruction, Dean of Undergraduate Programs, Director of Continuing Education, Director of Continuing Education, Vice Provost, Associate Vice Provost, and Assistant Vice Provost (King & Gomez, 2008). Twenty one percent of university presidents in the above mentioned report came from this vast and diverse group of individuals, which means that less than 21% of university presidents have a career pathway that includes experience as a CRO.

According to Stripling (2012), the most common pathway to the presidency to date is through the position of provost. Stripling, (2012) goes on to note that thirty four percent of university presidents were formerly provosts or chief academic officers, and thirty percent of presidents have never been faculty. Stripling, (2012), also reports that the most common field for academic presidents is "higher education". However, based on a random internet inquiry conducted prior to this study, we found that the CRO is neither commonly from the area of education or on the pathway to the position of provost. This finding served as impetus for further research on the career pathway for CRO.

This study is significant first and foremost, in that it is important to provide a profile of this important position in the literature, not only to identify the pool of current CROs but also to provide a literature base with which to examine the evolution of the role through the course of time. It is equally important for individuals aspiring to the position of CRO to have a realistic understanding of the current career pathway for the position of CRO and also to be knowledgeable of the direction of the evolving professional field. It was hypothesized that the profile of the CRO would be similar to the profile of the research administrator as defined in the field of research administration. It was also hypothesized that a common pathway to the position of CRO would be through the pathway of research administration.

Methods

Introduction

Influences on the CRO career path were examined including acquired skills, professional development, and lived experiences. Purposeful sampling was employed to select the study sample of CROs using the Carnegie Foundation's Carnegie Classification system as a framework.

This study was limited to CROs serving at Doctoral Research Universities (DRUs), Research Universities/High Research (RU/H) and Research Universities/Very High (RU/VH). A total of 283 institutions are classified within the categories by the Carnegie system.

Using the Carnegie Foundation Classification System as a reference, email addresses of CROs serving at major Higher Education Institutions (HEIs) were obtained. In an effort to obtain a list of email addresses for the CROs of major research HEIs in the United States, the Carnegie Foundation was contacted, and the researcher subsequently was directed to "Higher Education Publications Incorporated", publisher of title code 46 which contained information for 203 individuals listed as the CRO representing 183 institutions. An analysis of the names on this list lead to the elimination of duplication to the list or more than one person at an institution that was classified as the CRO, as well as persons that held titles that did not qualify as CRO such as Assistant Vice President for Research or the leadership of the institution was still spread among multiple directors and lacked a chief research officer. Furthermore, though the list contained the names, it did not contain all the email addresses. In some cases it was also found that a small percentage of the names provided on the list were no longer in the position and an interim CRO was in place. The end result was a much smaller number than 183.

The list was then compared to the list of 283 Carnegie Classified institutions and every effort was made to obtain the information for the institutions that were not included on the list obtained from Higher Education Publications. Missing emails were found on the institutions websites, or solicited by an email to the institution requesting the information. Once the final list was constructed and any conflicts eliminated. The final result provided a total of 240 institutional CROs. The survey was sent out to the researcher refined email list using Snap Survey Software. Surveys created in Snap software are made to distribute via email. The survey allowed scaled items as well as open ended questions. At the conclusion of the survey the participant simply sends the information back to the originator, electronically, but without being connected to the email address in the results provided to the researcher. This allowed for the participant to remain anonymous and receipt of their responses separated from their identity. The data once gathered was placed onto a spreadsheet coded for SPSS analysis, and then provided to the researcher. The researcher developed survey questionnaire was used to examine CRO career paths in terms of lived experiences acquired skills, and professional development.

In addition, a copy of each participant CRO's resume was requested and the Internet was used to find existing CRO job descriptions. One month after the initial solicitation a reminder email was sent. Additional requests were sent every two weeks until a response rate was achieved that fell within a 10% margin of error. Respondent resumes and job descriptions were content analyzed, and a master list of themes developed. Data were compiled and coded to determine categories for analysis.

Institutional Review Board (IRB) consent and approval was obtained prior to any data collection. Study participants were assured that their participation would be kept confidential. Once IRB approval was obtained, email requests to participate were sent to the CROs of the 240 research universities identified by the researcher.

Procedures

Sampling plan

CROs in United States research universities served as the target population for this study. Purposeful sampling was employed to select the study sample using the Carnegie Foundation for the Advancement of Teachings, Carnegie Classification System. Currently 84 institutions are included in the category of DRU. The RU/H category includes 103 institutions and the RU/VH category includes 96 institutions, for a total of 283 institutions that are classified by the Carnegie system. Of this number, 240 institutions were selected based on researcher developed criteria.

Data Collection

To investigate the career pathway of the CRO, qualitative research was used involving multiple cases. The purpose of case study research is to develop a comprehensive understanding of the subject matter and to develop general theoretical statements. Multiple case studies are good for identifying subunits or sub cases in the data. Mulitple case study research is commonly used when several cases are analyzed (Merriam, 1998).

Document and content analysis

To analyze the qualitative information, data collected through open-ended responses were compiled and coded from the researcher developed survey questionnaire as well as resumes that were voluntarily submitted to the researcher directly from the participants. Participants were given the option to send their resumes directly to the researcher separate from their response data. Twenty four resumes were voluntarily submitted. The researcher examined the data for exhaustive and mutually exclusive categories.

The current job descriptions of CROs were found on the World Wide Web and also coded and content analyzed in relationship to the coded information derived from respondent resumes and survey responses. Fourteen advertisements to fill positions of CROs in major research universities were found at the time of this research.

Qualitative data were gathered on the role and pathways of CROs through open-ended survey responses, resumes and job descriptions. The researcher attempted to build general explanations that fit each of the individual cases in the sample. At a very basic level, descriptive data were compressed and linked together by the researcher to "convey" meanings derived from the study. At deeper levels, the researcher attempted to construct categories or themes that identified reoccurring patterns in the data (Merriam, 1998).

Property Construction

Properties describe a category (Merriam, 1998). For example if there is a category of "professional development provided by a mentor", the properties might be; networking

with upper administration, personal training of job skills and personal recommendation for promotions. More specifically they define the dimensions of the categories.

The researcher developed profile survey used for purposes of this study consisted of forced answer questions and open-ended questions, with provisions for the respondent to elaborate or expound, as needed. Themes were identified—a classic approach to case study research (Merriam, 1998). Prior to its administration, the survey instrument was piloted and revisions made accordingly. Data were also examined as defined in Merriam, 1998 for exhaustive and mutually exclusive categories. Research questions were used to guide the research. When there is no clear theory or specific past studies, such as in this research, to guide the study this is usually the acceptable method (Neuendorf, 2002). The research questions guiding this study were.

1. What personal and professional factors characterize individuals employed as CROs in major research universities?
2. What internal and external factors such as lived experiences, mentoring and the career paths are perceived to have impacted the CRO?
3. What career paths lead to the position of CRO?

The constant comparison method was used beginning with a particular "incident" or occurrence, as identified in an open-ended survey response or resume. The incident was then compared with another similar "incident" or occurrence in the same set of data or in another set. These comparisons led to tentative categories that were compared to each other accordingly.

An attempt was made to build general explanations that fit each of the individual cases in the sample. At a very basic level, descriptive data were compressed and linked together to "convey" meanings derived from the study. At deeper levels, an attempt was made to construct categories or themes that identified reoccurring patterns in the data. Post category analysis was also employed and consisted of property construction and the generation of hypotheses.

The categories developed or themes were inferred by the data and not the data itself. Open-ended survey comments, resume, and job description data identified as relevant to the role and career pathway of the CRO were grouped and categories or themes constructed and constant comparisons made. Category lists or "themes" were derived from these document sources as shown in Tables 1, 2, and 3. A comprehensive table representing all data sources of themes was constructed, as shown in Table 4. These themes reflect reoccurring findings and evolved as each piece of data was analyzed.

The "properties" defined the dimensions of the categories. For example, where there was a category of "professional development provided by a mentor," the properties constructed were networking with upper administration, personal training of job skills, and personal recommendation for promotions.

Human coding was used. A codebook was constructed recording the codes for all variables measured. All coding was determined to have only one appropriate code. If there was a possibility of multiple codes then they were broken down into separate measures, for example

Skills	Obstacles	Mentors	Professional Development Opportunities
Doing Research	Upper Administrators	Departmental Chair	Small Research College
Obtaining Research Awards	Adequate Funding	Dean	On the Job training
Faculty Experience	Being 1st Generation College Student	Undergraduate advisor	Leadership roles in professional organizations
Business Experience	Being Internal Candidate	Vice President for Research	Department Chair
Leadership Exp.	Relocation	Direct Supervisor	Federal Research agencies
Interpersonal	Not having a mentor	Professor	Academic Positions
Diversity & Collaboration	Decentralized Organization	Colleagues	Meetings
Faculty Support	Gender Bias	Branch management	Networking
Human Resources	Lack of Management training	Chancellor	Professional Publications
Global Perspective	Bias against discipline	President	Mentors
	Infrastructure	None	Mgmt. and Lead. Training programs
	Low institutional reputation	Provost	Compliance Training
	Lack of Experience in Administration	Graduate advisor	Service on boards
	Looking Young	Post-doc advisor	Reading
	Switching from Research career to Administrative	Lab Directors	Chairing Committees
	Lack of compliance knowledge	Former supervisor	Publishing
	Dual career spouses	Predecessor	Workshops in Mgmt. and lead.
	Politics	Associate Chair	Membership in professional orgs
	Personal demands	Other administrators	Open minded
	Transfer from personal to collective accomplishments	External Professionals	On line training
	Ethnicity		Working for Provost
	Insecure people		Bus school lead. training course

Table 1. Properties of Survey

Business	Collaboration & Diversity	Scientific& Scholarly	Leadership	Interpersonal Skills	Faculty Support
Foundational Knowledge & Experience	Intercampus Relationships	Earned Doctorate	Admin. Experience	Ethical	Develop Programs
Increase extramural funding	Private Partnerships	Eligible for tenure	Knowledge of Research Compliance	Forward thinker	Support faculty startup packages
Entrepreneurial Leader	Public partnerships	Record of funded research	Provide Vision and Direction	Integrity	Design Faculty Development
Increase Tech Transfer	Partnerships at both local and national businesses	Personal research accomp-lishments	Strategic Planning	Respect for all persons	Provide state of the art services
Familiarity with patenting and licensing	Relationship with State and Federal granting agencies	Record of NIH funding	Inter-National research experience	Visionary	Work with faculty to establish strategic research focus areas
Knowledge of Federal research policies	Commitment to diversity of the faculty and students	Previous faculty experience	Team builder	Organization-al skills	Ensure adequate resources are provided for campus research
Experience in budgeting	Global Collaboration	Credentials for full professor	Vision	Good written and oral communi-cation skills	Assist faculty in developing patents
Create an economic development plan	Commitment to shared governance	Record of publication	Further University prestige	Sensitivity	Provide assistance in preparing grant applications
Infrastructural knowledge	Promote historically under-represented groups to further their research careers		Global leader	Innovative	
	Work with Diverse faculty		Manager		
	Collaborate with upper admin				
	Advance diversity				

Table 2. Major Category and Sub Category Properties of Job Descriptions

Scholarship	Private Sector Experience	Academic Experience	Business Experience	Community Service
Doctorate	Regional and State Activity	Administration	Economic Development	Committee Membership
Research Awards	Interagency activities at the Federal level	Faculty	Technology & Commercial-ization	Board Membership
Peer reviewed Publications	International collaboration	Researcher/ Scientist	Patents	Club Membership
Invited talks	Private Research Corps	Undergraduate Supervision	Knowledge of Grants and Contracts	Contributor
Other talks (contributed papers, posters and presentations)	Member professional organizations	Graduate Student Supervision		Volunteer
	External Reviewer	Institutional Committees		Community Lectures
	Editor	IRB and IACUC knowledge (Research Compliance)		
		Assist Deans developing areas of research		
		Promote cooperative use of research infrastructure		
		Post Doc Supervision		
		Mentoring		

Table 3. Major Category and Sub Category Properties of Resumes

Main Combined Category/Theme	Sub Category/Theme	Sub Category/Theme
Scholarly		
Faculty	Position	Support
Business	Regulation	Tech Transfer
Diversity	Collaboration	Inclusion
Vision	Global/International	National
Leadership	Administration	Management
Mentors	Having mentors	Being a mentor

Table 4. Qualitative Data Combined Incidents

one code was deemed for obstacles in the career path, however there were several subcategories that ensued such as, gender, first time college graduate etc. Authors agreed upon the coding and resulting categories over 95% of the time. When disagreement evolved, discussion ensued until there was an agreed upon criteria before moving on.

Quantitative Analysis

Quantitative analysis was used to determine the descriptive characteristics of the sample. Professional variables were obtained through forced answer questions on the survey. In some cases ranges were presented and participants chose what range they fit into. The professional variables measured were as follows; scholarly achievement, relocation for position, salary range, field of discipline, years in research administration, years in current position, Carnegie classification, best preparation for position and how they became the CRO.

The personal variables were as follows; age range of participant, age range of children, ethnicity, gender, marital status, religious participation and level of volunteerism (see table 5).

Results

The survey was designed to examine both the descriptive characteristics of the CRO as well as the career paths of CROs. In addition, the survey was designed to examine acquired skills, professional development, and lived experiences of the CRO in research universities in the United States. It was hypothesized that the profile of the CRO would be similar to the profile of the research administrator as defined in the body of related literature. The findings did not support this hypothesis. Presented in this section is the first profile of the highest research administrative position, the CRO. Tables of response data for each variable are presented in tables 6 & 7 as a percentage of the total sample of survey respondents (n=81). Data is also disseminated by Carnegie classification.

It was also hypothesized that a common progression to the position of CRO would be through the ranks of research administration. The data did not support this hypothesis. The pathway to the position of CRO is defined from the data. Finally descriptive data is presented for acquired skills, professional development, lived experiences with mentors and perceived barriers.

Professional	Personal
Scholarly Achievement	Age Range
Relocation	Children/age range
Salary Range	Ethnicity
Field of Discipline	Gender
Years in field of RA	Marital Status
Years in current position	Religious participation
CC	Volunteerism
Best preparation for position	
How became CRA	

Table 5. Personal variables

Profile of CRO

Two hundred and forty CROs in major research universities were solicited to participate in a survey. Eighty one CROs responded. The profile of the CRO was found to

be different from that of the profile of the general research administrator that Roberts & House, 2006 and Shambrook & Roberts, 2010 found, thus clarifying the need to investigate a separate profile of the chief position of research administration from all other research administrative positions. Frequency data revealed that the CRO is a white male at least 50 years of age, but most often 60 years of age or over. The finding is comparable to the average age of the typical university president which is 61 (Stripling, 2012). The trend for the variable of age is for the younger CROs to be in Carnegie classified DRU institutions. The typical CRO volunteers, at most, once per month, but most often not at all.

		RUVH	RUH	DRU	Total
Age	under 50	0	31	31	6
	50-60	36	38	31	39
	60+	64	59	31	54
	NR	0	0	7	1
		RUVH	RUH	DRU	
Gender	Male	82	79	54	76
	Female	15	21	39	21
	NR	3	0	7	3
		RUVH	RUH	DRU	
Ethnicity	White	94	94	86	91
	Non White	6	6	14	8
	NR	0	0	7	1
		RUVH	RUH	DRU	
Marital	Married	97	91	92	93
	Not M	3	6	0	3
	NR	0	3	8	4
		RUVH	RUH	DRU	
Children	Yes	91	91	92	91
	No	9	6	0	6
	NR	0	3	8	3
		RUVH	RUH	DRU	
Volunteerism	No, almost never	52	26	31	38
	Yes	48	71	54	59
	NR	0	3	8	3
		RUVH	RUH	DRU	
Religious Participation	No, almost never	58	56	15	53
	Yes	36	38	77	41
	NR	6	6	8	6

Table 6. Personal data expressed as a percentage

In terms of religious participation, respondents indicated an all or none situation in other words either participating weekly or not participating at all. Scholarly achievement was found to be high among CROs. The majority of CROs have given over 100 presentations at scientific meetings and conferences. Most have also typically published over 100 articles. CROs were found to have a history of being the principal investigator on their own research projects and to also collaborate with others on their research projects. They typically have obtained various research awards and based on their open ended responses, scholarly activity remains important to them even after they move into administration. Interestingly however, in the self-reported barriers faced, one of the most often cited barriers CROs reported was trying to continue with their scholarly activity.

Career Pathways

Survey data related to career pathways resulted in the emergence of 4 main pathways, that is, Faculty/Academic, Administrative, Private Industry, and a "Combination" (see Figures 1-2).

		RUVH	RUH	DRU	Total
Lectures	None	0	0	8	1
	under 50	9	26	31	20
	over 50	27	32	38	33
	over 100	64	42	15	45
	NR	0	0	**8**	1
		RUVH	**RUH**	**DRU**	
Publications	None	0	6	15	1
	under 50	12	15	54	20
	51-100	24	32	**23**	33
	over 100	64	47	0	46
	NR	0	0	8	1
		RUVH	**RUH**	**DRU**	
PI	None	0	6	**31**	8
	Under 50	64	74	61	68
	51-100	24	11	0	15
	over 100	9	9	0	8
	NR	3	0	**8**	3
		RUVH	**RUH**	**DRU**	
Collaboration	None	3	6	15	6
	under 50	64	68	77	68
	51-100	21	17	**0**	15
	over 100	9	9	0	8
	NR	3	0	8	3
		RUVH	**RUH**	**DRU**	
Awards	None	0	12	**46**	12
	under 50	79	70	46	70
	51-100	3	6	0	4
	over 100	12	6	0	8
	NR	6	6	8	6
		RUVH	**RUH**	**DRU**	
Prior Exp	Faculty	88	79	54	79
	Non-Faculty	12	21	46	21

		RUVH	RUH	DRU	Total
Discipline	Hard Sciences	85	79	54	78
	Other	15	7	38	21
	NR	0	0	8	1
		RUVH	**RUH**	**DRU**	
Salary	Less than 100,000	0	3	55	4
	101-300,000	55	94	45	75
	301-500,000	45	3	0	20
	NR	0	0	1	1
		RUVH	**RUH**	**DRU**	
Yrs in RA	Less than 3	6	6	8	6
	3-5	24	21	8	20
	5-10	27	41	22	33
	10-15	22	21	38	24
	15-20	18	0	8	8
	More than 20	3	11	8	8
	NR	0	0	8	1
		RUVH	**RUH**	**DRU**	
# times moved	0-3	88	62	69	74
	4-6	9	38	23	24
	7-10	3	0	0	1
	NR	0	0	8	1
		RUVH	**RUH**	**DRU**	
yrs in current	Less than 3	21	24	38	25
	3-7	61	50	31	51
	7-15	15	23	23	20
	More than 15	3	3	0	3
	NR	0	0	8	1

Table 7. Professional data expressed as a percentage

The most often cited pathway to the position of the CRO was the "Faculty/Academic" pathway. Eighty three percent of the respondents indicated prior experience in a faculty position, then moving on to a departmental administrative position, and then crossing over to the position of CRO. The least traveled pathway to the position of CRO was found to be the Administrative Pathway. For purposes of this study, the Administrative Pathway was defined as beginning at

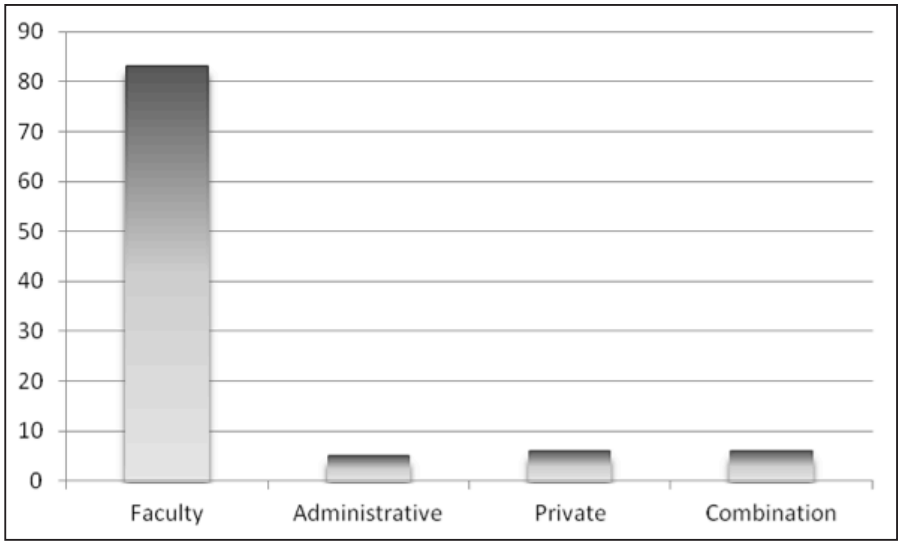

Figure 1. Four Career Pathways to the Position of CRO. Y axis is a measure of percentage.

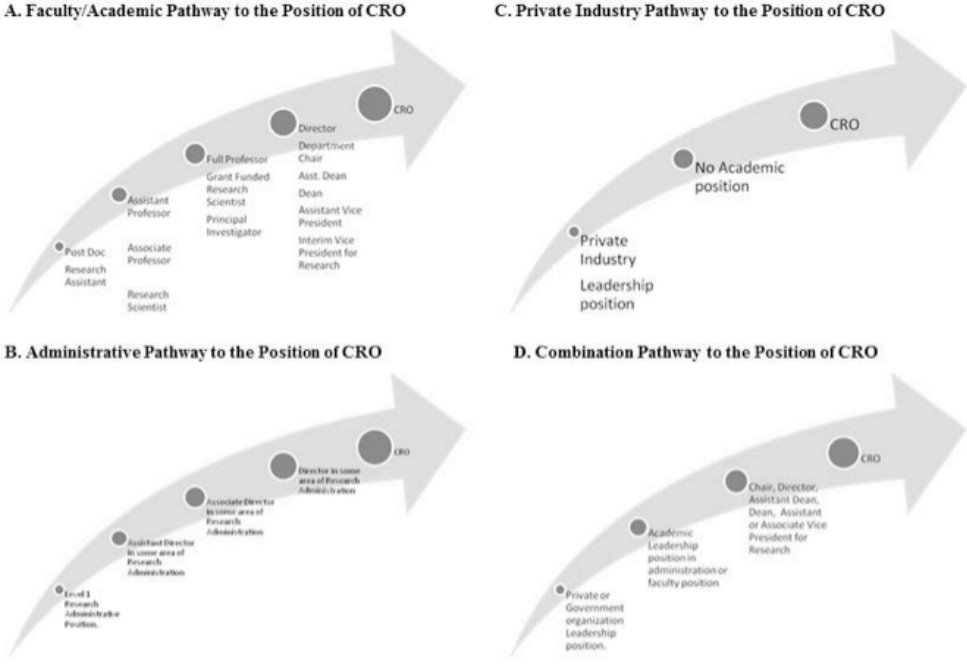

Figure 2. Career Pathways to Position of CRO.

the lowest levels of a research office or administrative position and progressing through the ranks of the research office.

The "private industry" pathway and the "combination" were both reported by only 6% of the survey participants as their starting point of entry to the CRO position. Professionals taking the "private industry" pathway emerged totally outside of the research university setting and made the transfer without ever holding a faculty position in an academic setting.

Respondents citing the "combination" pathway and having begun their career pathway as an administrator in the private arena or a government agency reported that they either moved into the academic arena and into a higher education administrative position, or came from private into a faculty position, transitioned to an administrative position, and rose to the position CRO.

Acquired Skills

Respondents were asked the question "In your opinion what skills or training do you feel are most relevant to obtaining a position as a CRO?" Skills most often reported (35%) by respondents perceived as helping them to prepare for the CRO position and acquired along the pathway were in the areas of actually doing research, obtaining research awards, being a faculty member, and having academic leadership roles such as department chair and dean. Interpersonal skills (30%) were the second most often reported skill area. This included communication skills, patience, inspiration and motivation of staff, and leading by example. Twenty three percent of the respondents identified business and administrative skills, followed by the ability to interact within a diverse culture of people, and having a strong sense of collaboration.

Professional Development

Survey respondents were asked the questions "In your opinion, what professional development opportunities have you had that you believe were directly beneficial to obtaining your current position?" The largest percentage of respondents (26%) identified belonging to professional organizations, reading the professional organizations literature and networking within these professional organizations, attending professional meetings, committee memberships, and workshop participation, as most helpful in terms of their professional development. Professional organizations most often cited included the Society for Research Administrators (SRA) and NCURA.

Seventeen percent of respondents indicated that formal training in leadership and administration was another area perceived as helpful in the climb to the CRO position. More specifically, respondents cited online training, research administration training, leadership training, and management training as helpful. Interestingly, being a faculty member and researcher were viewed as important by a slightly lower percentage (16%) of the respondents. Respondents notably commented on the development that can only be gained by the experience of being in these roles. Thus, not surprisingly, hands-on administrative experience and active regulatory involvement in the professional field were indicated by respondents as also contributing to

their professional development along the pathway to CRO. Other examples included serving as a reviewer or a site visitor in particular with respect to research facilities. Only 9% of respondents indicated that they did not participate in professional development during their career pathway.

Lived Experiences and Mentors

Respondents were asked the question "Did you have specific mentors in your career over time that helped you obtain this position?" Seventy one percent of the study respondents indicated that they had a mentor along their pathway to the role of CRO. Of this number (n=56), 20% reported that their Deans or Associate Deans served as their mentors, and another (n=56), 20% indicated that the former CRO, whose position they filled, served as their mentor. A small percentage (n=56), 4% - 6% indicated a response of "other" as having served as their mentors, whereas (n=81), 29% of the respondents indicated that they did not have any mentors along the way to the CRO position.

Lived Experiences and Barriers

A total of seventy respondents chose to answer the question "In your opinion, what obstacles do you believe you had to overcome in your career to achieve your various positions along the way." Of the seventy respondents, 70% reported barriers and 30%, responded that they had encountered no barriers along the pathway to the CRO position. Of the respondents reporting barriers (n=70), 21% reported gender as a barrier and, in particular, being a woman. Another barrier identified by respondents was "discipline bias." Other identified barriers or obstacles were a lack of compliance knowledge, lack of administrative/leadership/management training, being the internal candidate, bias against non-elite institutions, and collegiate background.

Resume and Job Description Analysis

CRO resumes were useful in providing career pathway information. Each respondent's resume career pathway information was coded using key terms and phrases and compared to survey analysis information. Resume information was found to fit into only two of the four career pathways having emerged from the study survey responses, that is, Faculty/Academic and Combination pathways. A possible explanation for the resume findings revealing only two of the four survey-identified pathways may be due to the small number of returned resumes (n=24). The likelihood of the pathways being found in the most commonly reported pathways of the overall study is logical. As a result (n=24), 83% of those who agreed and provided a copy of their resumes were found to have followed the "Academic/Faculty" pathway to the position of CRO. The remaining 17% were determined to have followed the "Combination" pathway to CRO position.

CRO job descriptions were retrieved using the online version of The Chronicle of Higher Education. Key terms and phrases were also identified in the job descriptions obtained and several corresponding categories were found when cross referenced with the terms and phrases obtained from CRO resumes. Only fourteen job descriptions were found at the time of the

study online and coded. These job descriptions, as examined, were found to be consistent with the four identified pathways. The requirements for the position of CRO distribution of job description properties, however, were spread more evenly, with no one category reaching over (n=14), 25%. Twenty four percent of the job descriptions, as context analyzed, resulted in "Leadership" skills identified most often as an important requirement for the position of CRO. The area identified as "Business" was found to be the second most often listed job requirement, at 23%. "Scientific and Scholarly" was identified 19% of the time. Of the job description properties, "Collaboration and Diversity" (17%), "Faculty Support" (11%), and "Interpersonal" (6%) of the job description properties were identified.

Interesting perceptions differed between the requirements identified as important, according to the job descriptions, and those that were deemed important based on the survey results as well as resume analyses. For example, job descriptions indicated that leadership abilities and knowledge of business practices were the first priorities or of most importance while survey results and resumes typically focused more on the area of scholarship and being a researcher as tantamount to success in obtaining the role. It is important to note that the profile portrayed by the job descriptions as desirable for hiring and who has actually been hired is slightly discordant.

Survey respondents also emphasized both the need and value of professional development. In addition, survey respondents reported committee service, though there was no mention of committee service being desirable in the job descriptions. Finally, both the job descriptions and survey respondents identified interpersonal skills as important.

Summary and Conclusions

This research study provides a foundation for future comparison and theory building. The research clearly evidenced that first becoming a successful research faculty member is currently the most traveled pathway to the position of CRO. Tenure as a faculty member and then transition to an administrative position such as department chair or dean appear to be key to obtaining the position of CRO. The majority of CROs studied actually attained two careers, one as a researcher and one as an administrator. More significantly, the majority of current CROs academically come out of the hard sciences. Leadership as a CRO also appears to require a track record of funded scientific research as a tenured faculty member at the university level. Research administrative experience is not a high priority.

It is widely understood that the CRO acts as the institutional official for University programs to ensure compliance to the Federal, State and university rules and regulations regarding health, safety and the responsible conduct of research. The institutional official exercises administrative and operational authority to commit institutional resources, enforce policies, authorize necessary administrative or legal action, and otherwise ensure that maintains strong and effective compliance programs. As required by federal and state regulations, the institutional official attends certain meetings and communicates with federal and state authorities. It was hypothesized that the pathway to CRO would, therefore, occur through increasingly administrative roles with research administration. Shambrook and Roberts (2010) do identify

a number of administrative roles for current research administrators and determined that the majority (72%) had more than 5 years of research administrative experience with increasingly more advanced degrees.

Counter-intuitively, the least traveled path to the position of CRO is through a career beginning in the lower rungs of, and moving up through, various staff and professional positions within the research administration unit. This pathway was only reported by 5% of respondents. On the other hand, the latter may also explain why, with regard to barriers, respondents cited lack of training in administration, budget, federal grant policy, and procedure as obstacles or difficulties while serving in the role of CRO. More specifically, CROs reported not obtaining a significant amount of formal administrative training, particularly with regard to the positions they are leading in the area of research administration. Rather there appears to be a greater respect for scholarship and the conduct of funded research prior to moving into the administration of other funded scholars. Along these lines, survey respondents commented that one has to know what it is like to be a faculty member to understand their needs and support them properly. Others commented that you must be a funded researcher and previous faculty member if you want the research faculty to respect you.

The current survey and analysis suggest that research administration is not identified as a professional position. Roberts and House (2006) and Shambrook and Roberts (2010), do report that the body of knowledge on "who" the research administrator is, to date, is non-existent. This belies the significant amount of education and experience in the regulatory components of research administration that is required for certification in research administration (Research Administrators Certification Council) Therefore, there is also becoming a greater need to describe the career pathway for future aspirants to the role. Along these same lines, in 2009 NCURA called for proposals to establish graduate programs for research administrators. The University of Central Florida was awarded a grant and in 2011 they established the Masters of Research Administration (Smith & Torres, 2011). Though a doctorate of Research Administration is not yet established, the progression of the field indicates future probabilities.

The profile of the CRO was found to be different from the profile of a general research administrator as found in the studies of Roberts & House (2006) and Shambrook & Roberts (2010). According to their studies the research administrator is more often female, holding a higher education degree rather than a degree from the hard sciences, between the ages of 40-49 years, typically holding BA or MA degrees with a salary of between $50,000-74,999. This study, by identifying data solely for the CRO, presents a profile of a white male over 50 holding a PhD typically from one of the hard sciences earning a six figure salary. Based on the analysis of the resumes from CROs and their response to the survey questions, it can be concluded that the profile of the CRO has more in common with that of aspirants to the presidency than within research administration. On the other hand, according to the literature the position of CRO is not a common pathway to the presidency (King & Gomez, 2008). This may suggest that the position of CRO is a terminal position.

The analysis of these data also suggest that there is a ceiling for professionals pursuing research administration career pathways These career research administrators can only progress to more

senior administrative roles. They may rise to the positions of Director within sponsored research units and/or University Contracts and Grants, but they will more than likely not become the Institution's CRO. The role, responsibilities and career pathway of senior administration staff of centralized research offices may bear further research.

Recommendations for Further Study

Ongoing research examining the career pathways, roles, and characteristics of the CRO is recommended in light of the limited amount of research that has been conducted to date. Studies in this area should also focus on non CROs to investigate whether they even aspire to the position of CRO. In addition, future research examining the CRO should be conducted across the entire spectrum of the Carnegie Basic Classification System. There may be significant differences between the CRO roles at each level of institution as defined by the Carnegie system and there may even be different pathways leading to the different institutions in each of the Carnegie classified institutional categories. Also the possibility of Research Administration becoming a discipline in and of its self, as indicated by the recent introduction of a Masters degree in Research administration at a major research university in Florida, may change the trajectory of the career pathway that leads to the position in the near future.

Authors' Note

Julie Nash, Ph.D., adjunct professor at Montreat College in North Carolina, recently completed her doctoral program at Florida Atlantic University in Higher Education Leadership.

Dianne A. Wright, Ph.D., is an Associate Professor of Higher Education Leadership and Finance within the Department of Educational Leadership and Research Methodology at Florida Atlantic University. Dr. Wright has served as both author and editor of several books, book chapters, and articles in peer reviewed journals focusing on Higher Education Administration and Leadership.

The corresponding author is Julie Nash, Ph.D., Tel: (561)-926-1888; Email: jhoneycu@fau.edu.

Julie A. Nash, Ph.D.
Adjunct Professor
Department of Psychology
Montreat College
North Carolina
Email: Jhoneycu@fau.edu

Dianne A. Wright, Ph.D.
Associate Professor
Department of Educational Leadership and Research Methodology
Florida Atlantic University
Davie FL 33314
Email: dwright@fau.edu

References

American Research Group. Retrieved from *www.americanresearchgroup.com*

Cohen, A. M. (1998). The shaping of american higher education: emergence and growth of the contemporary system. San Francisco: Jossey-Bass.

Chronicle (The) of Higher Education. *www.chronicle.com*

Duderstadt, J. J., & Womack, F.W. (2004). *The Future of the Public University in America: Beyond the Crossroads.* Baltimore, MD: The John Hopkins Press

Higher Education Directory. *www.hepinc.com*

King J.E. & Gomez G.G. (2008). On the Pathway to the Presidency: Characteristics of Higher Education's Senior Leadership. *American Council on Education*. Retrieved from: http://www.cupahr.org/knowledgecenter/files/PathwayPresidency.pdf

Kulakowski, E.C., & Chronister, L.U. (2006) Introduction; Leadership and Management of the Research Enterprise in the 21st Century. 2006. In E.t C. Kulakowski & L. U. Chronister (Eds.), *Research Administration and Management* (pp. 3 -8). Edited By Elliott C. Kulakowski, Lynne U. Sudbury MA : Chronister. Jones and Bartlett Publishers,

Merriam S. B. (1998). Qualitative research and case study applications in education. San Francisco, CA: Jossey-Bass.

Neuendorf K. A. (2002). The content Analysis Guidebook. Thousand Oaks: Sage Publications.

Research Administrators Certification Council. Retrieved May 6, 2008, from http://www.cra-cert.org/

Roberts T. J., & House, J. (2006). Profile of a research administrator. *Research Management Review, 15*(1), 41-47.

Shambrook J., & Roberts, T. J. (2010). Profile of a research administrator. *Research Management Review, 18*(1), 19-30.

Slaughter, S., & Leslie, L. L. (1997). *Academic capitalism: Politics, policies, and the entrepreneurial university*. Baltimore, MD: John Hopkins University Press.

Smith J.A., & Torres, L. (2011). The Process of Establishing a New Master of Research Administration Program. *Research Management Review, 18*(1), 1-19.

Stripling J. (2012). Survey finds a drop in minority presidents leading colleges. *The Chronicle of Higher Education.* Retrieved from http://chronicle.com

University Research – Understanding its role 1-15-11. Association of American Universities, January, 2011. Retrieved October 7, 2013 from http://www.aau.edu/research/university_research.aspx?id=6896