Reconfiguring the Research Administration Workforce: A Qualitative Study Explaining the Increasingly Diverse Professional Roles in Research Administration

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Abstract: *The research administration profession is in a time of significant change. The traditional jack-of-all-trades role has become more fragmented into specialized advanced roles, with a more recent focus on research development. Workflows are increasingly becoming more electronically automated. The introduction of graduate degrees and professional certifications has introduced a new complexity within the office hierarchy. Moreover, recent global events have shifted the profession into a remote working environment, causing industry-wide voluntary employee turnover as employees consider new opportunities, work/life balance, and cost of living ramifications. This qualitative study used semi-structured interviews to capture research administrators' experiences within four research questions: 1) how is a traditional research administration professional role defined today; 2) how does the chain of command respond to new professional roles; 3) how has the standardization of professional knowledge through education and certifications impacted the workforce; and 4) how does the distribution of tasks become fluid to get work done between the different research administration professionals? Practical implications of this research include understanding that traditional research administrator roles are flat with no hierarchy or room for professional growth within the individual or collective research offices. The creation of promotion opportunities in order to provide professionals a pathway to rise in ranks and achieve higher titles and commensurate wages is vital to the future success of the profession. Another practical implication of this research is the call to begin raising awareness of the professional certifications outside of the research administrative profession in order to gain further distinction and notoriety within the research landscape. The increased need for educational degrees, especially doctoral-level work, in order to gain academic reputation is restrictive to the future of the profession. The profession of Research Administration is in a time of rapid expansion. The aim of this study is to clarify the development of new*

professional roles in research administration. In doing so, this research maps the emerging extended professional roles and provides insight into the social and administrative processes that drive the development of these extended roles.

Keywords: *workforce; professional roles; research administrators; workflows; certification; education; workforce development*

Introduction

In response to shortages in the workplace and the persistent changes in scientific funding and its workforce, national authorities and research organizations have endorsed inter-professional work and task substitutions. Consequently, the research administration workforce has diversified in several directions with formalized roles for research assistants, specialized roles for departmental and compliance administrators, advanced roles for research leadership, and new roles for new services, such as research development (Currie et al., 2009). This workforce reconfiguration demonstrates a growing international trend in research administration policy to redistribute support services on the basis of professional achievement rather than historical workforce hierarchies and roles (Currie et al., 2009; Goodman, 2019; Salvatore et al., 2018; Sanders & Harrison, 2008). Additional data is required to clarify the development of new professional roles in research administration. The current research maps the emerging extended professional roles and provides insight into the social and administrative processes that drive the development of these extended roles.

Persistent changes in scientific funding and the research administration workforce have dramatically impacted the availability of research administrative support services worldwide. Consequently, the research administration workforce has diversified in several directions with formalized, specialized, and advanced professional roles and new roles for new services, such as research development. This study contributes to what is known about the current international research administration workforce landscape from the perspectives of research administrators who are experts on research support delivery. This study helps us to understand the current landscape of the research administration workforce. Findings from the study may be used to help organizations determine research administration policies regarding workflows and hierarchy, and/or resource allocation to improve research support and better serve research faculty.

Background

Seventy years ago, research administration as a profession did not exist. The first professional titles included department administrator or coordinator, program manager, executive/administrative assistant, and the like. In the last 50 years, the research administration workforce has undergone transformative changes in response to the ever-changing regulatory landscape and the general expansion of the research enterprise. Fifty years ago, the NIH budget was just under $1 billion as compared to the 2021 budget of $43 billion. There were nine institutes; now, there are 27 Institutes and Centers, each with a specific research agenda (Peterson, 2021). Over the years, to comply with increasing federal regulations, but also in response to significant increases in the

national budget, research administration has become a highly specialized profession with on-site and multiple external sources of training and education. The profession now requires individuals from a broad spectrum of professional backgrounds, including science, accounting, engineering, ethics, law, finance, and non-profit management. It has transformed from paper to digital communications and workflows, greatly facilitating the growth and speed of research innovation. Research administration has developed into a critical leadership role at universities and non-profits. However, the formalized professional roles of the research administration workforce have not yet been mapped and are not fully understood (Goodman, 2019).

The literature on workforce reconfiguration and new role development is centered on professional jurisdiction, or the central hub in which a certain profession claims valid control over a domain of work by way of its expertise. Andrew Abbott coined this concept in the late 1980s to indicate professions' right to control particular services and activities (Abbott, 1988). Professional groups claim exclusive authority because their work is grounded in specific knowledge, including indeterminate and experiential tacit knowledge, yet situated and embodied in practice (Freidson, 1988). A growing body of literature shows a significant impact of the introduction of new roles on jurisdictional claims (Currie et al., 2009; Huising, 2015; Salvatore et al., 2018; Sanders & Harrison, 2008). The concept of professional jurisdiction is helpful in defining the traditional role of research administrators and understanding how hierarchies and process workflows may be developed to encompass role diversity in the future.

Professional work is increasingly shaped by the interests and routines of employers—aligning professional expertise with organizational and commercial needs (Evetts, 2011). Recently, authors have argued that professions respond and adapt to an organization's needs and incorporate the organizing work themselves, redefining 'organizing' as one of their core competencies (Noordegraaf et al., 2014). This more dynamic evolvement of professional roles can lead to a more diverse professional work, thereby shifting professional jurisdictions. The exact extent of this diversity across research administration is yet unknown, as are the drivers of this change and their interactions. This paper aims to provide additional insight into the evolution of extended professional roles in research administration and examines the drivers of extended professional roles.

This study contributes to what is known about the current international research administration workforce landscape from the perspectives of research administrators that are experts on research support. This study aims to clarify the development of new professional roles in research administration. The four questions guiding this research are: 1) how is a traditional research administration professional role defined today; 2) how does the chain of command respond to new professional roles; 3) how has the standardization of professional knowledge through education and certifications impacted the workforce; and 4) how does the distribution of tasks become fluid to get work done between the different research administration professionals?

Methods

This is a qualitative study using 16 semi-structured interviews to capture research administrators' experiences with research administration support. Participants were research administration professionals or leaders with a convenience sampling in the United States. Interviews were conducted using a semi-structured interview script via video-conferencing software and were audio-recorded to preserve data integrity. Interviews lasted approximately 15 to 45 minutes and were conducted in English. Recordings were transcribed verbatim, and the transcripts were then analyzed to allow common themes to emerge within the four research questions.

Interview Script and Strategy

An interview script was used to reduce variation. The interview script ensured that each participant was asked the same questions in the same manner to help ensure consistent data collection. The use of a predetermined interview script also enabled the interviewer to avoid general discussion and instead ask focused questions to get focused answers. This practice also ensured the conformability and dependability of the data, while also demonstrating the research expertise of the study team.

Member-checking was used as a tool to validate the accuracy of the data, provide evidence of credibility, and promote trustworthiness within the study. Within 72 hours of the interview, the interviewee was sent a full verbatim transcript of their interview in a Microsoft Word file. Interviewees were then given 72 hours upon receipt to review the file for accuracy and validate what they said and meant. The 72-hour window provided a sense of urgency while allowing enough time for a full review. If the interviewee made changes and provided an edited Microsoft Word file, that new file was used for data analysis. If they provided changes in another format, such as written comments, the researcher then made edits and returned it to the interviewee once more for another review, with a request to return within 72 hours of receipt. If no confirmation was received from the interviewee within 72 hours, the researcher assumed that the transcript was correct, and the original file was used for data analysis. To help reduce the possibility of no confirmation, the researcher explained the member-checking process before and after the interview to set expectations.

Study Procedures

This is a qualitative interview study. The study team interviewed research administration professionals in different roles (e.g., departmental, leadership), from different organization types (e.g., public, private), across all United States regions using a semi-structured interview script. The semi-structured interview design was appropriate to gather rich data related to experiences with research administrative support services related to extended professional roles in research administration support teams. Using purposive sampling to ensure qualified participants, the researchers interviewed experts from a variety of roles and organizational types to maximize variation in perspectives. Potential participants were sent a recruitment email inviting them to participate in a research study. Interested participants responded to the research team, and interviews were scheduled promptly.

The study team interviewed all those who agreed to participate and completed the scheduling and consent process. Interviews were scheduled at a time that was convenient for the participant and interviewer and took place over the phone or via a video-conferencing software (e.g., Zoom and Microsoft Teams). Respondents were asked to sign an information sheet after answering all their questions in place of an informed consent document consistent with flexible IRB standards. Inclusion criteria for the interviews were that participants were research administrators with some level of experience with research support at their organization. Individuals who do not have knowledge of their organization's research services or who do not speak English were excluded from the study.

Data Analysis

We used the four domains of the interview script as an a priori codebook for initial coding. Then, within each domain, we conducted detailed inductive coding, allowing themes to emerge. Our goal was to describe the range of participant experiences within each domain, adding valuable context to research administrator workforce experiences. This study does not use blinding or masking.

The research team used hand-coding to label and organize the qualitative data to identify themes. Inductive coding, also called open coding, was used to start from scratch and create codes based on the qualitative data itself. After reading through the data to get a sense of the general themes, the researcher assigned the first set of codes and placed them into a hierarchical coding frame. The researcher then went back through the data again, line by line, to code the data in more detail. A second member of the research team then repeated this same process to ensure accuracy in the qualitative analysis.

The study team interviewed 13 participants before the first data analysis. An additional three participants were then interviewed with the same approach and interview script. Moreover, a second data analysis was then undertaken. As no new themes were then added, study saturation was reached at 16 participants.

Results

The first author identified a ranked list of 34 research administrators at the Director level or above for inclusion in the study. Participants were ranked according to their level of knowledge and expertise within the field. Of those contacted, 15 responded and followed through with scheduling a research interview. Those 19 who did not respond after two follow-up communication attempts were not included in the study. All research interviews took place via video-conferencing platforms (e.g., Zoom or Microsoft Teams). The average length of interview time was 20 minutes. Only 6 participants returned a corrected or modified interview transcript. The remaining 10 participants approved and accepted the original interview transcript verbatim.

Sixteen participants interviewed represented small (4, 25%), medium (6, 37.5%), and large (6, 37.5%) academic research institutions from around the United States, including the Southeast (6,

37.5%), Southwest (3, 18.8%), Midwest (3, 18.8%), Northeast, (2, 12.5%), and West Regions (2, 12.5%). The majority of participants held a Director position (6, 37.5%), followed by Executive Director (3, 18.8%), Manager (2, 12.5%), Assistant Vice President (2, 12.5%), Vice President (1, 6.3%), Senior Director (1, 6.3%), and Assistant Director (1, 6.3%).

We present our findings under four headings, corresponding to the four a priori domains (Table 1). Under "How is a traditional research administration professional role defined today?" we describe the traditional values that have remained the bedrock of our profession. And yet, the research organizational chart has become more chaotic as institutions attempt to meet the increased need with a single professional catch-all role. Under "How does the chain of command respond to new professional roles?" we describe how the profession has matured and introduced layered career pathways, more specialized roles, to keep institutions competitive within the broader research landscape. Under "How has the standardization of professional knowledge through education and certifications impacted the workforce?" we categorize several focused graduate study programs and professional certifications that demonstrate a broad knowledge and niche expertise in the profession. Working knowledge, on-the-job training, and experience are still the main currency with which Research Administrators demonstrate expertise to those outside the profession. Finally, under "How does the distribution of tasks become fluid to get work done between the different research administration professionals?" we describe how institutions have begun to add hierarchy within professional roles. Junior clerical roles have been created with the intent to free up working managers to innovate and troubleshoot broader workflow problems. Historically and industry-wide, Research Administration was a purely reactive role. As the profession has matured and more institutions have introduced layered career pathways, more specialized roles have been created to keep institutions competitive within the broader research landscape. We illustrate the results with quotes and extracts of observational notes from the study interviews.

How is a traditional research administration professional role defined today?

The traditional research administrator perpetually lacks a standard occupational definition (Collinson, 2007; Gabriele, 1998; Pringle, 1989). In fact, the professional has lacked a clearly defined role for so long that a measure of fluidity has become part of our occupational identity in academic research as the workplace "significant others" (Collinson, 2007). In comparison with 'permanent' academic faculty and staff who are perceived as core professionals, the traditional research administrator is still often termed as periphery support staff (Collinson, 2007). Attempts to define the traditional role focus primarily on the management administration of research grants and projects, including proposal development, project and award management, financial monitoring and accounting, and some degree of compliance (Kerridge & Scott, 2018; Silva, 2018).

Specialization between pre-award and post-award has enabled professionals to extend their roles and carry out administrative tasks relatively independently from other aspects of the research lifecycle. As professionals develop expertise and administrative routines in a particular area, the definition of a "traditional research administration" has changed. According to participants, the traditional research administrator still provides understanding, innovation, safety, service, and structure to the research enterprise.

Table 1. A Priori Domains and Coding Matrix

Initial Coding Domain	Level I	Level II
Research Administrator Role	Provides Understanding	
	Provides Innovation	
	Provides Safety	
	Provides Service	
	Provides Structure	
Chain of Command	Chaotic Organizational Chart	Centralized Vs. Decentralized Vs. Hybrid
	Role Title Changes	Match Existing Workload
		More Autonomy
		Reassignment Or Redistribution
		Creation Of Hierarchy (Research Administrator I, II, III)
	VPR Turnover	
	New Roles to Meet New Need	Clerical Roles
		Compliance
		Information Technology
		Social Media
		Budget
		Veterinarian
		Proposal Development
Certification vs. Education	To Get the Job	
	To Get Promoted	
	Professional Societal Memberships	
	Certifications Recognized in Field, Worthless Outside	
	Unique and Personalized Journey	
Workflows	Streamlining Using Technology	
	Policies Create Order	
	COVID Aftereffects	Voluntary Turnover

The traditional research administrator provides insight. Participants indicated they are considered a jack-of-all-trades and a generalist. They possess a wide range of skills and abilities and do everything under the sun. Their general role is a catch-all label that is not clearly identifiable and often varies the gamut. The traditional research administration professional role has become more fractured over the years as the funding landscape and regulations have become more complex.

> *"It's a kind of catch-all label. If you were to call up an institution and say, 'How many Research administrators are working in your institution?' They could not give you that number, because we're not identified as researcher administrators."*

> *"It really varies the gamut, depending on what position you're in. It goes anywhere from finding the funding information, to helping with the proposal and budget against the application, to the sponsor accepting the award, making sure compliance is in place, the post award administration, the issuing of sub-agreements, the financial reporting, compliance in the area of animals, humans export controls—you name it."*

The traditional research administrator provides innovation. Participants indicated their work is at the center of research development. They often provide support in the pre-award phase and perceive they are critical in elevating principal investigators and their work. As staff who help researchers put projects together, they are instrumental in increasing researchers' understandings of key extramural elements such as funding agency requirements.

> *"We provide some project management, particularly on the monsters or the very large, complex proposals, which also generally have lots of money attached to them. We are taking those principal investigators, and then seeing if you can take them to the next level and go for federal funding."*

> *"We want a mixture of faculty fully equipped to engage in research because that is part of their tenure and promotion. We are working with them to help them understand the funding agency, to help them build out their projects to see where they are going to be competitive. How they may need to rethink things. A lot of hands-on work with them."*

The traditional research administrator provides safety. To some degree, research administrators provide guidance on the more complex rules and regulations on almost every level. According to participants, their knowledge is instrumental in ensuring compliance and safety through all levels of the organization. Furthermore, they are, by far, the experts when it comes to bureaucratic requirements both inside and outside of the institution. These activities provide safety for the institution and principal investigators.

> *"Basically, the interface between the faculty, the researcher, and the whole bureaucratic requirements for preparing, developing, submitting a proposal, and then dealing with it if you actually get it. That interface is quite broad. It requires a wide range of skills and analytical ability to be done well."*

> *"Their role is pretty much advisory, guidance, and helpfulness. The Research Administrators are very much detailed-oriented on tasks with a focus on accuracy of data entry and understanding*

the sponsors regulations inside and out. The traditional research administrator has been a combination of those two roles."

The traditional research administrator provides service. Research administrators are advisors in a highly political workplace. They rely on diplomacy and rational thinking to provide constant guidance to our principal investigators. Research administrators know who does what and can answer any question.

"It requires a whole networking skill, though. Formal and informal. Political skills, mostly actually dealing with your associate, you know your Associate Director for Research, your upper-level people, because sometimes issues are more political than logical. As far as being driven by certain rational thinking."

"I think traditionally, people think about the people that help you get the money, and then the people that help you manage the money."

The traditional research administrator provides structure. Participants indicated research administrators are the middle spoke of the wheel regarding research and project management expertise. They use adept networking skills to corral people and keep principal investigators up to date and on track.

"Research administrators are responsible informally for being the middle spoke of the wheel. They're responsible for pretty much knowing who does what in the rest of the university that a faculty member might have to ask. So, they, they don't have to necessarily know the answer, but they have to be able to either get the answer themselves or send the faculty in the right direction to get whatever information they need."

"It is related to deliverables and corralling people if you will—corralling information and essentially setting up the faculty member for success. I think that's probably the main overall understanding of what we do."

From the interview data, it was apparent that research administrators play a key role in active work required to build and maintain the research enterprise. Extended professional roles into pre-award and post-award arenas depend on local, and sometimes even individual department arrangements. Across all institutions, the traditional role was defined in some measure through "pre-award" and "post-award" activities. An example of a general role is the departmental research administrator, who may handle all pre- and post-award administration aspects. An example of a specialized role is a pre-pre-award or research development administrator assigned to help investigators identify funding opportunities and grow grant writing skills. The diversification of the general role often mirrors the diversification of the research portfolio of a single department, university, or institution.

"In general, in the past, the roles were always really well defined and very simple. There was pre-award, and they helped you put in grants. And then there was post-award, and they helped do accounting on grants. But as things have evolved over time, there's all these other niches and roles that have been created. Now there's pre-award analysts and billing teams and post-award

contract. People that do different contracts, because some are federal and some are other types. That the rules have become more abundant, and the lines with which we used to previously define those rules are less clear."

Similarly, a comparison reveals diversity in tasks among professionals with the same job title, e.g., research administrator, research coordinator, grants, and contracts manager. Hence, the exact role of a traditional research professional, including tasks, competencies, and responsibilities, may differ between institutions. This implies that although the findings of this study provide insight into the increasing diversity in individual roles, they cannot easily be generalized across the global workforce. Furthermore, the diversity in the definition of a traditional role complicates the comparison of new extended professional roles. We cannot compare professional roles based on job titles. Hence, the main advantage of this study is on the development of new roles in diverse contexts.

"But, remember, these positions are different in the universities and comparable positions don't necessarily have the same title. Everywhere else there is an Associate or Assistant Vice President position, and we don't have that here. So, sometimes it's hard to measure apples to apples. But we look out into the world, and we see what everybody else is doing, what's the industry norm. For instance, I saw a need for merging the IACUC and IBC administration offices together under one supervisor because those two units work interactively. And I thought I was the first person to do that, but then the market showed several others. While surprised, it was also reassuring and afforded a level of validation, that I'm not crazy. I mean it's nice to think that we have reinvented the wheel and now everybody's going to copy us, and sometimes that happens; but it's also validation to see that, yes, this is an industry norm, and it worked well with some high-powered institutions, even if they don't use the same title."

While participants communicated that research administrators are important providers of structure in their institutions, they also stated there is great variation in what that structure looks like. Research administrators may share skills like networking and project management, but there are an increasingly number of niche jobs, and job duties may vary even within similar—or exactly the same—job titles. Participants conveyed that this constant evolution and increasing variation makes it difficult to generalize trends in the research administration workforce.

How does the chain of command respond to new professional roles?

New specialized professional roles have been created at some institutions to help research faculty overcome certain barriers, including research development and grant writing, facilitating data collection and statistical analysis, advising on federal regulations and policies, and offering technical assistance or clerical support to reduce paperwork burden (Cole, 2010; Evans, 2011). When these new specialized roles are created, the research organizational chart often becomes more convoluted and chaotically disorganized, leaving teams unsure of the proper workflows.

Interview data showed that traditional research administrator roles are flat. There is "no hierarchy" within the individual or collective research offices. There are "no promotion opportunities" that provide professionals a pathway to rise in ranks and achieve higher titles and commensurate

wages. This revelation ties back to the idea of the traditional role as a "generalist—everyone does anything" and, therefore, the need for separation and promotion is negated.

> "When I got here, it was a really flat organization. Not a lot of career opportunities. People tended to leave because there was nowhere to go. So, I have created a structure with Team Leads to give some people the opportunity to do some supervisory responsibility and have a lower-level management responsibility. And then, more recently, I've taken the opportunity to put a couple of those into Assistant Director positions. Again, the idea, and I faced this at other universities is, how do you keep people? How do you get people that are highly knowledgeable? And your high performers, that you don't want to leave, what can you do for them?"

Similarly, the research organizational chart is traditionally convoluted and chaotically disorganized. While most institutions agree on either a centralized, decentralized, or hybrid model of managing pre- and post-award activities, the workforce hierarchy between these structures is blurred. One emergent theme in the interviews was a marked vacancy and high turnover rate in the Vice President of Research role in each institution. Constant turnover in the highest levels of the research hierarchy leads to constant change within the flows and patterns of the organizational chart.

> *"Have you ever seen the plans for one of the old Heathkit radios? That is what the organization chart for research administration looks like. ...Chaotically."*

> *"I think that for me that the distribution of responsibilities is probably appropriate. You know I can't judge if it's right or wrong. I also again know a little bit more about how it works. My guess is that people who are less familiar with that structure, which is probably most people besides me, and the people who work there, struggle to understand how, how it all works together."*

> *"There's been some turnover, there's been some reassignment of tasks, and we're about ready to start a major reorganization."*

The kind of work and responsibilities delegated to research administrators in extended roles differs among individual professionals and is also situated. The need to simply keep things going encourages the introduction of new roles. The fluidity of the workplace enables individuals to participate in complex situations. Yet what they actually do depends on their professional background and acquired competencies. Interviewees noted that role title changes are common to address extended roles and responsibilities. An outdated professional title is changed to match the existing workload (e.g., already doing the work of a promoted role) or give the individual more autonomy (e.g., a working manager). These types of title changes often result in the reassignment or redistribution of tasks among existing professionals or may result in a new hire. Hence, locality or 'situatedness' plays a critical role in the (re)allocation of tasks. The differences in tasks and responsibilities, the organizational embeddedness of professionals, and the situatedness of the work, limit continued development of extended professional roles and may even lock professionals into their workplace.

"Those team leaders worked out well, I think. The staff, what they said was, they appreciated someone closer to them, someone who knew all the ins and outs, and knew the processes, and really could be that subject matter process matter expert. ...And right now, we are 10% above where we were last year. So, if you think about the volume increase, my help of carving just small amounts of time just so they would keep being the subject matter experts is getting harder and harder to do. ...they're doing less and less of those more managerial kinds of things. ...a lot less of that process, policy development, a lot less of that kind of stuff."

"By far, the most advantageous change in the creation of new professional role lies in the creation of position hierarchy (Research Administrator I, II, and III) creating a professional pathway to promotion."

"Human Resources does try to create a semblance of career paths for research administrators, and for Sponsored Research as well. They started with a Sponsored Research Administrator I, and then a II, and a III; but nobody wants to be a I. If it failed, it may be because no one wanted to be a level I, and there was a lot of criticism of the level III criteria. Then there are level III's who want to be an Assistant Director level. The "career path" gave supervisors a way to justify increased salaries as their scope of responsibilities. I suspect that we are not the only university where research administrators struggle with salary compression, heavy workloads and high stress environment."

The creation of new roles to meet new needs was marked in specific target areas related to compliance, communication, and niche research areas. Specialization enables professionals to extend their role and carry out administrative tasks relatively independently from their peers as they develop expertise and routines in a research area. An example of a specialized technical role would be a Research Information Technology Data Analyst. New roles forecasted for research administration are in research information technology, research compliance, social media/ research communications, and proposal development/grant writer. This last role in proposal development was flagged as a more traditional task that has fallen by the wayside and needs to be revived in order to provide a more day-to-day proactive approach to research portfolio development.

"I would want to see someone take on a role of a communications position, that dealt only in communications from the research office. I think that's what's lacking. Many times, we fall to the background and we're only available when people need us. But then we're not really communicating very well. And so, it's not just communicating about the work that has to be done but it's communicating about all kinds of things, like all these wonderful things that are happening, you know, keeping track of what's going on in the government, creating online forums for faculty groups, moderating those types of things."

"We have a new role that was designed to sit between research administration and the Principal Investigator to support the Investigator if they have a question about a grant application, financials, contract, clinical trial—anything—they can just go to their business partner, the expert on where to go and how to get a problem solved. So, the idea is that a Principal Investigator has one contact to deal with any problem, or to troubleshoot any issues. I think that there was a

general recognition that a lot of investigators didn't feel like they knew how to solve problems, and there weren't enough people in the departments to be able to solve them. Because of all the growth and expansion, there was some recognition that in order to help faculty keep up with all of the things they were going to need that somebody to help and hold their hand through it."

"I would say the pre-award team is stable, the contracts team is stable. I think the ones that are really where we really evolved have been more on the technology information systems side, you know, putting in a new pre-award system ... I think there's been a lot of investment and a lot more roles around the integration of the technology with both the workflow of the research administration team, but also the workflow of end users."

Research administrators protect their jurisdiction by distributing non-specialized work to others. From the interviews it was apparent that new low-level clerical roles needed to be created to free experts to troubleshoot and respond to higher-level administrative issues. This lower-level clerical role incorporates a more generic perspective, considering and responding to the general administrative aspects of research.

"It has been, I think, very helpful in making that pipeline and we're able to see a lot more turnaround, that's probably the biggest turnaround that I have seen. With more people working kind of at the lower level or the first point of contact type of positions, it does free up management to troubleshoot and problem solve when something occurs, or to work on some of the more complex proposals and funding."

"I don't think my new role affected their workflow. There was a lot of trepidation. Like "you're not allowed to talk to Principal Investigators about budgets." You know, the territoriality was definitely there, everyone was like, "Don't you infringe on what we do. We tell faculty and you're not going to tell them." So, it's politically fraught. I had to spend a lot of time building trust.... So, it was a gradual increase in trust, and learning and networking, just building those bridges."

"So, there needed to be somebody that was kind of managing everything on the ground so that person is in charge of the day-to-day tasks as they directly relate to the Office of Research. They tap their Directors... and they empower them, and it funnels down that way."

"[Low-level clerical roles] help us practice fighting fires, help us be proactive, give someone a chance to think and not only think about the question or the problem they have, but the bigger context. Like okay so, 'I've heard this question now three times, what could we put in place to help mitigate that next time?' Right? And there's not a lot of time, truly not a lot of time, for that planning and thinking."

How has the standardization of professional knowledge through education and certifications impacted the workforce?

The standardization of professional knowledge is evidenced through an academic identity, "an identification with intellectual traditions and groups, with departments or disciplines, with academic peer-groups, networks and learned societies" (Delamont et al., 1994, p. 149). The formal academic identity of research administrators has grown exponentially in the last decade

due to, in part, the creation of professional certifications and formalized graduate education.

This section describes two directions in which the standardization of professional knowledge has impacted the research administrative workforce: 'to get the job' which involves generalization on key activities, and 'to get promoted,' which involves increasing the level of expertise in a narrowly defined area.

To get the job, a bachelor's degree is required (master's degree preferred) at most institutions, although on-the-job training and experience is highly prized in lieu or in addition to any formal education. While most institutions do not require a professional certification to land the job, it is highly encouraged as it shows the candidate has the fortitude and knowledge to complete the certification requirements. To get promoted, a master's degree is required (doctoral degree for the most senior positions) at most institutions, and individuals must be at least eligible to sit for certification—if they are not already certified. In most cases, certification is required within a specific time limit of accepting the position. Whether hired or promoted, on-the-job training was equally important as education and certification.

> "Position-specific, obviously, but most of the time we have a minimum requirement of a bachelor's degree. If you're looking for a management position, minimum requirement is a master's degree. We really want people to have been educated to have a degree, because it shows some focus. We don't require you to be certified. But, we like it when you do because it shows that you have put the effort forward. We don't require you to have engagements with other institutions or organizations, but if you do that just means more networking for us, and more visibility for organizations. It's important."

> "Even for the new roles I'm creating or the existing roles, my approach has generally been at least a minimum of a bachelor's degree for kind of a broad overview, depending on what the task are more interested in experience and relevant skill sets."

> "Part of what my goal is, as well as to professionalize the workforce, ...ensuring that people have the professional development that they need, the opportunities that they can get. I do look at credentials. But I also looked at what people can do, right? So, a lot of what I'll do in an interview, whether they have the credentials or not, I'll ask them a question I know is specific to what they do. And if they can explain it to me, then I feel comfortable that they can do it and they understand. If they can't walk me through that, then I have some concerns that they don't know what they're doing. ...Sometimes we have to do a better job explaining the "why" to a Principal Investigator rather than what the policy is. If the policy is x, just telling them they can't do it because the policy is x is not helpful because faculty members are built to question. So, if you can link it back to a "why," then it helps them understand that it's not just a gatekeeper. So, we're committed to trying to do that."

> "We tend to hire people who have had at least some clinical trials experience ...so they have a little bit of an understanding what of the importance of accuracy and the importance of timeliness, not guessing. If you don't know find out. Because guessing will get you in trouble. And I think they do a really good job on that. I have two folks who are certified. One came to me certified and the

other certified while he was here. And they are among my leaders, as far as being able to field some questions that the team has. They have weighed-in a little bit more strongly on revision of guidelines. And I think that that extra background, gives them more of a basis to feel comfortable in giving up those opinions, and now they have to get the chops to back it up."

Research administration certifications are recognized within the field by fellow professionals and colleagues but are worthless to those outside the profession. It was apparent in the interviews that certifications are essential only to those within the research administrative profession. Educational degrees, especially doctoral level work—regardless of degree specialization—are the only recognition that research administrators receive outside the workforce.

"I got my Ph.D. while I was doing this in 2009. And, having a PhD after my name makes faculty that much more comfortable. I mean you can see it, because, 'oh, she may not be a subject matter expert but she's another Ph.D.'"

"In my opinion, credentials like the CRA are most valued by colleagues in the field. They know how hard it is, the CRA exam is comprehensive, and having this credential provides greater credibility. But, it is no substitute for a PhD. What I am seeing is the research administrator profession is increasingly higher-degreed, higher-credentialed. For example, research administrators specializing in contracts increasingly have JDs now. Ten years ago, the staff person that drafted your proposal budget was just really good with spreadsheets. Now, the post-award side of the house requires more sophisticated skills and specialized knowledge. We have people that are in the post-award side that are actually accountants. I think that professionalizing the field of research administration is a really good trend for industry. However, this may also create a barrier to those who wish to enter the field."

"For those who aspire to be a Director of Research at an R1 university, progress toward your PhD matters. My advice to anyone who is mentoring early career research administrators, encourage them, 'if you work in a university, take classes.' Advance your education, earn the credentials, and professional success will be more attainable."

Finally, research administration societal memberships across almost all participants were standard expectations to keep individuals apprised of developments in the field.

"If I asked you to tell me about compensation reporting in uniform guidance, and that's going to draw a blank—that's not something that I think is acceptable in this profession. It's not that you have to be an expert, but you have to know where to find information. And that to me is like one of the biggest things, if you don't get out of your own little space. You don't talk to people if you're not engaged on the list or if you're not at least attending virtual events like workshops and webinars, then you're not growing professionally, that's really not good for your institution because it means that you're not imparting that new knowledge to the groups with whom you work. For our faculty to come to us and tell us about regulations is embarrassing to me. We need to know this stuff."

"The staff that I've hired have had no connection to research administration or outside educational resources before, they just never had those opportunities presented to them. So, they came here

like, 'Oh, well you're going to pay for that [conference attendance]?' I responded, 'Yeah, that's my expectation. You're going to continue to be educated. That's why we're doing this.' And the answer is 'You're the best.'"

How does the distribution of tasks become fluid to get work done between the different research administration professionals?

As with most occupations, research administration has more than its fair share of red tape, and corresponding rule bending, rule breaking, and workaround behaviors (Bozeman et al., 2021). And despite the dawning of the 21st century, many research administrators are still carrying a physical manilla-beige envelope with a printed sheet of copy paper with a red "sign here" flag around campus.

"We're still using that good old 12th-century technology of paper and ink. ...I have a big stack of pink folders with little stickies. I decided that everything that I needed to know for my job, I learned in kindergarten. Write in the lines, write neatly, play nicely with others, and put the stickers in the right place. ...It's amazing that we are using the same technologies that were used to sign the Magna Carta. ...But that's going to be changing. We're actually implementing e-binders, in the next two months. We are about three months into that process. And we're now getting to the point of getting other departments engaged."

"You know, there's still a lot of walking the paper around campus nonsense. Yes, believe me. And when you're really complicated, each department is special or different. When you're decentralized to such an extent that little state has their own cultures, their own requirements. 'This is a way we do it.' We have different stakeholders. So, attempts to try to standardize are interesting. People learn a lot."

The use of policy and procedures to create and define order within research workflows is common in most institutions, if at varying degrees of effectiveness.

"We all know each other and we know what each other does. We are working through the lifecycle of an award. We all understand what the process is, and where we fit in the process. And as we are growing, we are we are growing in our library of processes, and procedures and policies. We are we are in that growth phase where you can't call somebody and just get something fixed, because it's large enough become a process. That's part of the growing pains of where we are, what we need to do."

"We've been without a full time Vice President for Research for about several years. It's really interesting because we are in this really weird state of inertia. ...We have all these floating policies [that] haven't been made permanent procedures. So, we are just flying by the seat of the pants sometimes. That's the only thing I would say has really thrown us a little bit for a loop ...we've had a lot of turnover at the highest ranks, at the highest levels."

The coronavirus SARS-CoV-2 (COVID-19) pandemic has forced the hand of many institutions to move the research enterprise into a fully virtual remote work opportunity. While some institutions are either unable or unwilling to make this virtual leap, others have fully embraced

the remote professional, leading to an industry-wide voluntary turnover. Research administrative professionals are joining the global resignation movement to land new remote positions that offer higher wages and clear pathways to promotion.

> *"I think that what we're seeing now is a high level of turnover in research administration, because they're working from home, and they're burning out—faculty are too. The workload balancing is hard to do when everyone's in-person and they can talk to them. And it's almost impossible to do when people are remote. ...And, as research administrator roles pivot to hybrid or fully remote jobs, it is critical that we communicate about workload balancing and workflows. This is an area that technology can play a larger role. ...I think communication and technology will be key as flex work is going to change the way that we work and how we manage people."*

> *"I will say that this past year or so with COVID is hard to look at as a normal year. It's been crazy, and we have a new wave of people transitioning in and out. I would say traditionally the post-award office has been a revolving door. I'm thinking that perhaps some of this restructuring is probably a combination of the people in charge and the type of job, a banker's job. People love you when you can help them get money, but they don't love you when you tell them what they can and cannot do with the money. So, I think as an outsider looking in, that's a hard position to endure for long periods of time."*

Many campuses have only recently started initiatives to streamline administrative tasks using technology. While new technologies facilitate the development of specialized roles (e.g., research information technology), the distribution of tasks can become more complicated if the hierarchy is unclear. The use of technology plays a large role in the distribution of tasks and ensuring work completion between different research administration professionals. And, as more professionals bridge the gap between remote work, the role of technology and distance will continue to influence the fluidity of team productivity.

Discussion

Research Administration used to be very simple: pre-award and post-award. Likewise, the Research Administrator professional hierarchy was very flat, providing no career pathway for professionals and forcing everyone to become a generalist jack-of-all-trades. However, as compliance and regulatory issues become more complex, more individualized specialized roles were developed. Further still, when the number of research proposals per institution grew, the research organizational chart became more chaotic as institutions attempted to meet the increased need with a single professional catch-all role.

Attempts to professionalize Research Administration have led to several focused graduate study programs and professional certifications that demonstrate a broad knowledge and niche expertise. While a master's degree and professional certification are encouraged for employment or promotion, these designations are still more prized and recognized within the profession. Working knowledge, on-the-job training, and experience are still the main currency with which Research Administrators demonstrate expertise to those outside the profession. Advanced degrees, most notably a Ph.D., are required to respect outsiders, such as a Principal Investigator.

Institutions have only recently begun to add hierarchy within these professional roles. Junior clerical roles have been created with the intent to free up working managers to innovate and troubleshoot broader workflow problems. Titles have been reassessed and changed to reflect current workloads more accurately and provide access to higher salary brackets. Titles are also changed or updated to give an individual employee more autonomy. Institutions may also reassign or redistribute tasks among existing personnel to improve workflows. Finally, institutions are creating new stratified titles, e.g., Coordinator I, II, and III, to provide a career pathway that promotes employee development and retention.

As institutions made the journey from simple pre- and post-award to a more varied hierarchy of professional roles, the individualized research development support role was lost. Administrators spent more time on the mechanics of proposal submission and award management. Historically and industry-wide, Research Administration was a purely reactive role. As the profession has matured and more institutions have introduced layered career pathways, more specialized roles have been created to keep institutions competitive within the broader research landscape.

Most recently, institutions have made the shift to create new research development roles within the "pre-pre-award" space. These roles are intended to proactively start writing fires and stimulate a collaborative and engaged research community. The grant writer or research development role is often designed to provide individualized support for Principal Investigators, set them up for success in the funding marketplace, and actively take their research to the next level. Research development is critical to elevate the prestige of the research enterprise, and it is quickly becoming an essential role.

From the interviews, it was apparent that each research administrator experienced a unique and personalized professional journey. No one chose this profession from the start but instead landed in their position through a series of happenstance situations. This 'jungle gym' approach to the career ladder is perhaps one reason it has taken so long for the profession of research administration to formalize.

The profession is in a time of significant change. The traditional jack-of-all-trades role has become more fragmented into specialized advanced roles, with a more recent focus on research development. Workflows are increasingly becoming more electronically automated. The introduction of graduate degrees and professional certifications has introduced a new complexity within the office hierarchy. Moreover, the coronavirus SARS-CoV-2 (COVID-19) has shifted the profession into a remote working environment, causing industry-wide voluntary employee turnover as employees consider new opportunities, work/life balance, and cost of living ramifications. The profession of Research Administration is in a time of rapid expansion.

There are some limitations of this study that need to be mentioned. First, the findings are based on 16 qualitative interviews. Although the participants were selected carefully, we cannot exclude different experiences with new professional roles in institutions not represented within this small sample. This small sample size is acceptable for qualitative work, and study design methods strove to achieve maximum variation. Although qualitative saturation was achieved, there could still be counterfactual cases that were not discussed in this study. Finally, this study is based in the United

States and does not provide international perspectives.

We see at least three relevant avenues for future research. First, it would be interesting to relate these findings to a larger and more international cohort of research administrative professionals to investigate how transferrable the findings are to other countries. Second, it would be interesting to investigate the effect of diversification of research administrative teams on the effectiveness and efficiency of the research enterprise. Although there is some evidence that professional diversification and extended roles may help improve team efficiency, it is largely unknown how this may affect institutional research outcomes and the research administration workforce as a whole. Finally, additional research regarding the requirement of advanced degrees, most notably a Ph.D., to earn the respect of outsiders, such as a Principal Investigator, and for job advancement, is an interesting topic that merits further review.

Conclusion

The profession is in a time of significant change. The traditional jack-of-all-trades role has become more fragmented into specialized advanced roles, with a more recent focus on research development. Workflows are increasingly becoming more electronically automated. The introduction of graduate degrees and professional certifications has introduced a new complexity within the office hierarchy. Moreover, recent global events have shifted the profession into a remote working environment, causing industry-wide voluntary employee turnover as employees consider new opportunities, work/life balance, and cost of living ramifications.

Practical implications of this research include understanding that traditional research administrator roles are flat with no hierarchy or room for professional growth within the individual or collective research offices. The creation of promotion opportunities in order to provide professionals a pathway to rise in ranks and achieve higher titles and commensurate wages is vital to the future success of the profession. Likewise, the revelation that research organizational charts are convoluted and chaotically disorganized provides room for improvement. Immediate focus can be paid to clarify the boundaries between pre- and post-award activities. Another practical implication of this research is the call to begin raising awareness of the professional certifications outside of the research administrative profession in order to gain further distinction and notoriety within the research landscape. The increased need for educational degrees, especially doctoral-level work, in order to gain academic reputation is restrictive to the future of the profession.

The profession of Research Administration is in a time of rapid expansion. The aim of this study was to clarify the development of new professional roles in research administration. In doing so, this research maps the emerging extended professional roles and provides insight into the social and administrative processes that drive the development of these extended roles.

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