8-2023

A Qualitative Inquiry of Research Administrator Perceptions of Job Satisfaction in a Central Research Administration Unit at the University of Denver

Noelle L. Strom
University of Denver

A Qualitative Inquiry of Research Administrator Perceptions of Job Satisfaction in a Central Research Administration Unit at the University of Denver

Abstract

The Sponsored Programs Administration (SPA) team provides critical research administration services for the research community at the University of Denver. As research funding continues to rise at the University of Denver, retention of research administrators is critically important. Job satisfaction is key to employee engagement and retention. Higher job satisfaction contributes to several positive outcomes for institutions, including lower turnover, higher productivity, lower costs, and employee loyalty. The need to retain experienced research administration professionals is highlighted by the fact that few formal educational routes exist that prepare employees for a career in research administration; rather, developing expertise takes a long period of on-the-job training. Consequently, strategies to increase employee retention are more important than ever for research administration leadership. Utilizing a qualitative inquiry methodology, this evaluation identified the nature of a research administrator's work and explored how the elements of the work affect job satisfaction. Self-determination theory, a broad framework for the study of human motivation, links the concerns of organizational performance and employee satisfaction and wellness by suggesting that both are impacted by the type of motivation that employees have for their job activities. Evaluating the work environment of a research administration unit through the lens of self-determination theory provides the conceptual framework to guide the formation of processes and practices that positively impact both the organization and the employees. Several findings on the nature of the work and its effect on job satisfaction point to four recommendations as well as broader implications for practice. The four recommendations include increasing the frequency and clarity of communications with the SPA team; prioritizing employee retention across the institution; addressing the SPA team's workload; and implementing more effective training programs.

Document Type

Dissertation in Practice

Degree Name

Ed.D.

First Advisor

Mike Hoa Nguyen

Second Advisor

Michele Tyson

Third Advisor

Laura Sponsler

Keywords

Evaluation, Higher education staff, Job satisfaction, Research administration

Subject Categories

Education | Educational Administration and Supervision | Educational Assessment, Evaluation, and Research | Higher Education | Higher Education Administration | Other Education

A Qualitative Inquiry of Research Administrator Perceptions of Job Satisfaction in a Central Research Administration Unit at the University of Denver

---

A Dissertation in Practice

Presented to

the Faculty of the Morgridge College of Education

University of Denver

In Partial Fulfillment

of the Requirements for the Degree

Doctor of Education

---

by

Noelle L. Strom

August 2023

Advisor: Dr. Mike Hoa Nguyen

Author: Noelle L. Strom
Title: A Qualitative Inquiry of Research Administrator Perceptions of Job Satisfaction in a Central Research Administration Unit at the University of Denver
Advisor: Dr. Mike Hoa Nguyen
Degree Date: August 2023

Abstract

The Sponsored Programs Administration (SPA) team provides critical research administration services for the research community at the University of Denver. As research funding continues to rise at the University of Denver, retention of research administrators is critically important. Job satisfaction is key to employee engagement and retention. Higher job satisfaction contributes to several positive outcomes for institutions, including lower turnover, higher productivity, lower costs, and employee loyalty. The need to retain experienced research administration professionals is highlighted by the fact that few formal educational routes exist that prepare employees for a career in research administration; rather, developing expertise takes a long period of on-the-job training. Consequently, strategies to increase employee retention are more important than ever for research administration leadership. Utilizing a qualitative inquiry methodology, this evaluation identified the nature of a research administrator's work and explored how the elements of the work affect job satisfaction. Self-determination theory, a broad framework for the study of human motivation, links the concerns of organizational performance and employee satisfaction and wellness by suggesting that both are impacted by the type of motivation that employees have for their job activities. Evaluating the work environment of a research administration unit through the lens of self-determination theory provides the conceptual framework to guide the formation of processes and practices that positively impact both the organization and the employees.

Several findings on the nature of the work and its effect on job satisfaction point to four recommendations as well as broader implications for practice. The four recommendations include increasing the frequency and clarity of communications with the SPA team; prioritizing employee retention across the institution; addressing the SPA team's workload; and implementing more effective training programs.

Acknowledgements

Thank you to my advisor, Dr. Mike Hoa Nguyen, for providing guidance and feedback through this project. Thanks also to my husband, Phillip, for his patience, encouragement, and support.

Table of Contents

Chapter One: Introduction

The University of Denver's vision is to be "a great private university dedicated to the public good" (*Mission, Vision, & Values*, 2023). One avenue for contributing to the public good is through research and scholarly work. Society's most pressing issues necessitate problem-solving and solution-seeking from researchers who engage in multidisciplinary collaboration across diverse fields (*Collaboration for the Public Good*, 2023). The University of Denver aims to empower researchers to solve the challenging problems of our time through research, scholarship, and creative work (*Research Overview*, 2023). Research administration services are the administrative support needed to successfully implement research programs (Kulakowski & Chronister, 2011); therefore, a successful research enterprise necessitates an efficient and effective research administration support team. Research administration at the University of Denver provides a crucial contribution to the research and scholarship that impacts the public good by providing essential administrative support. The University of Denver is experiencing a period of significant growth in research activity, a harbinger of increased demands and new expectations for research administrators at the institution. Therefore, the University of Denver serves as an ideal study site to evaluate the elements of the work of a research administrator at the institution and how those elements of work affect research administrators' perceptions of job satisfaction.

Evaluand and Evaluation Approach

The evaluand for this dissertation is the Sponsored Programs Administration (SPA) team in the Office of Research & Sponsored Programs (ORSP) at the University of Denver (DU) and how the SPA team describes elements of their jobs that affect job satisfaction. As a part of the central research administration office, the SPA team is responsible for grant pre-award and post-award research administration services to the research community at DU. This evaluation will identify the nature of the SPA team's work and explore how the elements of the work affect the SPA team members' satisfaction in their jobs. The elements that affect the SPA team's job satisfaction were evaluated with a general qualitative study (Merriam & Tisdell, 2015) because the general qualitative study is a strong tool to explore how people interpret their experiences and what meaning they attribute to their experiences.

Problem Statement

The Sponsored Programs Administration (SPA) team provides critical research administration services for the research community at DU. Research administration services are the administrative support needed to successfully implement research programs (Kulakowski & Chronister, 2011); therefore, a robust research enterprise necessitates an equally robust research administration support team. Administrative teams benefit from team members who not only have expertise in the field but also who have a longer tenure at the institution, allowing them to accumulate institutional knowledge and social capital (Knight & Leimer, 2010). Accordingly, retention is a key strategy to maintain and increase operational effectiveness in research administration.

Job satisfaction is key to employee engagement and retention (Bin Schmailan, 2016). Higher job satisfaction contributes to several positive outcomes for institutions, including lower turnover, higher productivity, lower costs, and employee loyalty (Bin Schmailan, 2016; Pushpakumari, 2008). Employee job satisfaction affects the volume and quality of job performance (Koys, 2001; Reed, 2021). The job satisfaction of members of the SPA team has high potential to affect the volume and quality of the research support services that DU provides to its research community.

Employee retention is an especially pressing concern in the wake of the COVID-19 pandemic. Droves of employees are reconsidering their positions and leaving for different opportunities (Hirsch, 2021; Kuzior et al., 2022; Serenko, 2022; Sull et al., 2022). In a phenomenon dubbed the "Great Resignation," millions of workers decided to quit their jobs starting after the first easing of pandemic restrictions in 2021 to move to other job opportunities for more attractive benefits, better working conditions, or higher pay. While some might assume that compensation is often the main reason why an employee leaves, recent research suggests that intangible elements of organizational culture (such as recognition for good work or the quality of personal relationships) is more often the key driving factor behind employee turnover (Hirsch, 2021; Kuzior et al., 2022; Serenko, 2022; Sull et al., 2022).

Higher education is no exception to the high rate of employee turnover (Josh Moody, 2022a, 2022b). While low pay or poor benefits are among the top reasons higher education employees leave their institutions, they are also driven by organizational factors such as a lack of advancement opportunities or feeling disrespected at work (Moody, 2022). A 2022 survey indicated that a majority (57.2%) of higher education staff members were somewhat to very likely to look for a new job within the next twelve months (Josh Moody, 2022b). The number is a 13% increase from the 2021 survey, indicating that turnover concerns only seem to be worsening. The University of Denver's Sponsored Programs Administration team illustrates the turnover concern in research administration: within a period of two months at the end of 2022, the SPA team's turnover rate was 33%.

The need to retain experienced research administration professionals in the university setting is compounded by the fact that few formal educational routes exist that prepare employees for a career in research administration; rather, developing expertise takes a long period of on-the-job training (Mullen, 2009). Furthermore, hiring research administrators is increasingly more of a challenge. A survey of higher education leaders revealed that a majority of institutions (53%) had a moderate to serious problem with hiring research administration employees in the first quarter of 2023 (Zahneis, 2023). Consequently, strategies to increase employee retention are more important than ever for research administration senior leadership at the University of Denver.

Evaluation Context

The University of Denver is uniquely situated as a private institution of higher education in the Rocky Mountain region that was classified in the Carnegie Classification of Institutions of Higher Education as an R1 institution (or a "Doctoral/Very High Research Activity" institution) in December 2021 (Stone, 2021).

R1 Classification

Administered by the Carnegie Foundation for the Advancement of Teaching and the American Council on Education (ACE), the Carnegie Classification is a framework for describing U.S. institutions of higher education (*Carnegie Classifications*, 2023). The Carnegie Classification helps to describe higher education information such as institutional type, size, setting, enrollment, and research activity. The R1 classification is one of the "Basic" classifications and denotes both the type of degrees awarded and the amount of research activity. The "R" designates that the institution is a doctoral university that awards at least 20 doctoral degrees or at least 30 professional practice doctoral degrees. Furthermore, an institution must have at least $5 million in total research expenditures to be classified as a doctoral university (*Carnegie Classifications*, 2023).

The numerical digit describes the level of research activity; a doctoral university is assigned to one of two categories, R1 or R2. The level of research activity is measured by four correlates of research activity: research and development expenditures in science and engineering; research and development expenditures in non-science and engineering fields; science and engineering research staff (which includes postdoctoral appointees and other non-faculty research staff with doctorates); and doctoral conferrals (*Carnegie Classifications*, 2023). These data are combined and analyzed to create two indices of research activity upon which the institution is classified. The doctoral institutions with the highest research expenditures are classified in the "Doctoral/Very High Research" category, which has the common shorthand of an "R1" university (*Carnegie Classifications*, 2023).

The University of Denver was classified as an R1 institution in December 2021. As the classification denoting the most advanced degrees and the highest level of research activity, the R1 designation is widely considered to be the best and most coveted rank in the Carnegie Classification (Nietzel, 2021). Therefore, the change to an R1 university was widely celebrated at the University of Denver (Haefner & Clark, 2022; Stone, 2021).

R1 Impact on Research Administration

In February 2023, an article titled "DU Grant Funding Soars Thanks to Faculty Efforts, Improved Infrastructure, and R1 Status" praised DU's growing research activity. In it, the senior vice chancellor for research explained that the change to an R1 institution is often an antecedent for even more research funding; the increased visibility from the R1 classification inevitably attracts more research funding (Meyer, 2023). Increased research funding will require more research administration support. Therefore, the transition to R1 status indicates that there will be new expectations for research administrators at the University of Denver. Furthermore, as research funding continues to rise, retention of research administrators is critically important. Both factors point to the timely importance of an evaluation of research administration at the University of Denver.

Research Administration at the University of Denver

DU's Office of Research & Sponsored Programs (ORSP), the central research administration unit, is structured as a combined pre- and post-award unit, responsible for both pre-award and post-award research administration services. DU's ten schools and colleges (encompassing engineering and computer science; business; natural sciences & mathematics; arts, humanities, and social sciences; international studies; education; professional psychology; social work; law; and career-focused education) each pursue different types and volumes of research, scholarship and creative work (*Research &*

Scholarship Annual Report, FY22, 2022; *Schools & Colleges*, 2022), and the Office of Research & Sponsored Programs supports all of it. In the fiscal year 2022 (FY22) that runs from July 1, 2021 to June 30, 2022, the University of Denver reported a record-breaking $43 million in research expenditures (*Research & Scholarship Annual Report, FY22,* 2022). This total reflects an increase in research expenditures of 123% over a mere ten-year period. In FY2022, two hundred and eighty-seven PIs (principal investigators, or the researcher responsible for the award) at the University of Denver were funded by external awards (*Research & Scholarship Annual Report, FY22*, 2022).

The Sponsored Programs Administration (SPA) team, a part of the Office of Research & Sponsored Programs, provides pre-award and post-award services to the DU research community. The DU research community consists of any DU faculty, staff, or student conducting research or scholarly work. *Sponsored programs* refers specifically to research or scholarly work that is externally funded: instead of being funded by the institution performing the work, the work is funded by an external entity, referred to as the sponsor. Pre-award services include helping researchers to prepare and submit proposals to funding opportunities. In FY22, the SPA team submitted two hundred and ninety-two proposals on behalf of researchers in the DU research community (*Research & Scholarship Annual Report, FY22*, 2022). The SPA team also provides post-award support services to the DU research community. Post-award services include helping researchers with the financial and managerial aspects of an award (*Sponsored programs administration*, 2022). In FY22, the SPA team set up and supported one hundred and twenty new awards on behalf of researchers in the DU community. The new awards accounted for a total of $25.9 million in new award funding (*Research & Scholarship Annual Report, FY22*, 2022).

The Sponsored Programs Administration team's recent turnover illustrated the dire need for employee retention measures. For several years, the SPA team consisted of one director and five research administrators. Shortly before the study data collection began, one research administrator left the team. During data collection, and within two months of the first departure, a second research administrator left the team, leaving the team at two-thirds its typical size. Alarmingly, an internal audit conducted during the study revealed that the University of Denver's recent growth in research expenditures had outpaced the SPA team's growth: the audit findings suggested that peer institutions of similar size and research expenditure volumes had teams of ten to twelve people, as opposed to the six people on the SPA team. At the period of heaviest turnover, the SPA team had four people.

Theoretical Framework

This evaluation uses the theoretical framework of self-determination theory (SDT). Self-determination theory (SDT) is a broad framework for the study of human motivation (Deci et al., 2017). SDT posits that the social environments that facilitate optimal human functioning and natural propensities for growth must fulfill the three psychological needs of *autonomy, competence,* and *relatedness* (Deci & Ryan, 2000). Environments and conditions that satisfy these three needs enable a person to function optimally while also experiencing feelings of well-being and satisfaction (Broeck et al., 2010; Deci et al., 2017; Deci & Ryan, 2000; Gagné & Deci, 2005). Therefore, SDT links the concerns of organizational performance and employee wellness by suggesting that both are impacted by the type of motivation that employees have for their job activities (Deci et al., 2017).

Purpose

The purpose of this program evaluation is to examine the experiences of research administrators on the SPA team at the University of Denver and how those experiences affect job satisfaction for the SPA team.

Study Significance

Through the lens of self-determination theory, this evaluation identified and explored the various elements that contribute (both positively and negatively) to the perceptions of job satisfaction as experienced by the SPA team. Identifying and understanding the elements that affect the SPA team's perceptions of job satisfaction will better equip decision makers at the University of Denver (both at the unit level and university level) with information on how by enhance the positive elements of the work and to mitigate the negative elements of the work. With new expectations from the R1 status and the anticipated further expansion of research activity that requires more administrative support, the performance and retention of DU's research administrators is critically important. The goal of the study was to develop strategies to increase the Sponsored Program Administration team's job satisfaction to improve employee performance, retention, and well-being.

Evaluation Questions

1. How do research administrators in the Sponsored Programs Administration (SPA) team at the University of Denver describe their work?
2. What elements of the work affect the SPA team's perceptions of job satisfaction?

Definition of Terms

Autonomy: Experiencing a sense of choice and acting with your own volition; one of the tenets of self-determination theory.

Award: Funds that have been obligated by a sponsor for a particular project.

Competence: Experiencing feelings of mastery and effectiveness; one of the tenets of self-determination theory.

Department administrator: A research administrator housed in an academic department or unit.

DU: The University of Denver.

ORSP: The Office of Research & Sponsored Programs.

Post-award: Any activities that happen to administer a research project following the official award being received.

Pre-award: Any activities that facilitate a proposal's creation and submission prior to the award being received.

Principal investigator (PI): The individual officially responsible for the conduct of a sponsored project.

Proposal: An application for funding that contains all information necessary to describe project plans, staff capabilities, and funds requested.

Relatedness: Experiencing the feeling of belonging and building a sense of community; one of the tenets of self-determination theory.

Research administration: The administrative support needed to successfully implement research programs.

Self-determination theory (SDT): A broad framework for the study of human motivation that suggests that the social environments that facilitate optimal human functioning and natural propensities for growth must fulfill the three psychological needs of *autonomy, competence,* and *relatedness*.

SPA: The Sponsored Programs Administration team.

Sponsor: The external entity that funds research, scholarship, or creative work.

Sponsored project: A grant, contract, or other arrangement formalizing the transfer or money or support from a sponsor to a recipient with the intent to either carry out a public purpose or provide a direct benefit to the sponsor.

Sponsored program: See 'Sponsored project'.

Chapter Two: Review of the Literature

The evaluand for this dissertation is the Sponsored Programs Administration (SPA) team in the Office of Research & Sponsored Programs (ORSP) at the University of Denver (DU) and how the SPA team describes elements of their jobs that affect job satisfaction. As a part of the central research administration office, the SPA team is responsible for grant pre-award and post-award research administration services to the research community at DU. This evaluation identified the nature of the SPA team's work and explored how the elements of the work affect the SPA team members' satisfaction in their jobs. The elements that affect the SPA team's job satisfaction were evaluated with a general qualitative study (Merriam & Tisdell, 2015) because the general qualitative study is a strong tool to explore how people interpret their experiences and what meaning they attribute to their experiences.

The relevant literature for this evaluation falls into five categories: understanding research administration; research administrator perceptions of work experience (such as work conditions or stressors); research administration effectiveness; staff job satisfaction in higher education; and self-determination theory.

Understanding Research Administration

Research administration is defined as the administrative support required to successfully carry out research programs (Kulakowski & Chronister, 2011). A research program is the set of scholarly projects that an institution and its members undertake to support the institutional mission. Children's Hospital of Colorado, for example, who had $131.2 million in funding for research in FY21, conducts research to "pioneer treatments with the hope of eradicating childhood disease and changing pediatric medicine – giving all kids a chance at a healthier future" (*Research and Innovation*, 2022). Another example is the National Renewable Energy Laboratory (NREL) in Golden, Colorado, who conducts research to "advance the science and engineering of energy efficiency, sustainable transportation, and renewable power technologies and provide the knowledge to integrate and optimize energy systems" (*Mission and Programs*, 2022). The University of Denver aims to "promote learning by engaging with students in advancing scholarly inquiry, cultivating critical and creative thought, and generating knowledge" (*Mission, Vision, & Values*, 2023). While a multitude of organizations (such as hospitals, research institutes, and state governments) rely on research administration services, this dissertation will focus on research administrators in a university setting at the University of Denver.

The research administrator works in the nexus of three critical stakeholders: the researcher (by providing administrative support, thereby enabling the researcher to focus more attention on their discipline); the institution (by supporting the institution's research mission), and the sponsor (by abiding by sponsor requirements for the use of their financial resources to undertake the research or scholarly work).

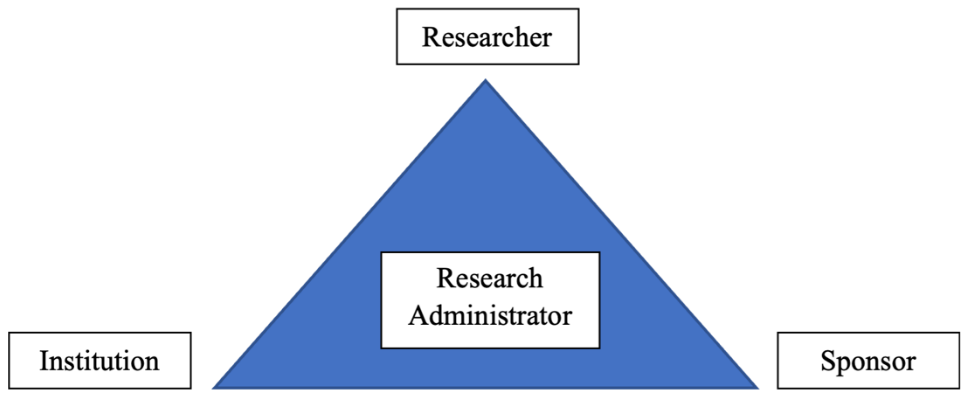

Figure 1. Research administrators serve the needs of the researcher, the institution, and the sponsor (Kulakowski & Chronister, 2011).

Research administration responsibilities cover a broad array. Research administrators help researchers apply for funding opportunities, especially with assistance in drafting proposal budgets, preparing proposal forms, adhering to proposal submission and reporting deadlines, and acquiring required institutional approvals and signatures prior to proposal submission. Research administrators support their institution by ensuring compliance with institutional policies, sponsor requirements, and federal regulations that impact the management of research. Research administrators promote cordial relationships between the PI, the institution, and research sponsors to maintain positive communication amongst all stakeholders. Research administrators assist with financial and managerial aspects of awards, such as reviewing and approving expenditures allocated to an award, monitoring unallowable costs, managing project invoices to receive payments from the sponsor, and submitting project financial reports. Finally, the research administrator has the responsibility for ensuring the integrity of institutional processes that impact research, such as hiring staff or students to work on the research project, documenting research expenses properly, or applying the appropriate facilities & administrative (F&A) cost rate to a project, to name a few (Kaplan, 1959; Kulakowski & Chronister, 2011; Reardon, 2021).

A research administration department often includes professionals who oversee a vast variety of responsibilities beyond those mentioned above, including human subjects research compliance, animal research compliance, biosafety, intellectual property, export controls on services or information released to foreign nationals, communications, training and education, and the IT management of an electronic research administration system used to streamline research administration processes. However, this evaluation will focus on research administrators who are mainly responsible for the pre-award and post-award functions of research administration.

Pre-award

Pre-award functions refer to those that take place before an external entity awards money for a scholarly purpose. These functions include identifying possible funding opportunities; developing the technical aspects of a proposal, such as a project description; preparing the logistical parts of a proposal, such as a budget or proposal forms; and submitting a strong and persuasive proposal to the funder (Kulakowski & Chronister, 2011).

Post-award

Post-award functions refer to those that take place after an external entity awards money for a scholarly purpose. These functions include reviewing award documentation; negotiating award terms and conditions; reviewing expenses to ensure the reasonable and appropriate allocation to awards; managing financial reporting; and ensuring financial compliance to both sponsor and institutional requirements (Kulakowski & Chronister, 2011).

Researchers and practitioners alike note the continuing evolution of the field of research administration as research institutions become increasingly complex, accelerated by internationalization, technological advances, changes in research regulations, and the resulting specialization of the profession to respond to the changing research landscape (Kulakowski & Chronister, 2011; Reardon, 2021; Roundtree, 2021). The recurrent change in the field necessitates continued investigation into successful research management strategies (Derrick & Nickson, 2014).

Research Administrator Perceptions of Work Experience

A sizable portion of the limited research on research administration explores who research administrators are and how they perceive certain challenges and issues that impact their work. Most research administrators are female and hold an advanced postsecondary degree (Kerridge & Scott, 2019; Reardon, 2021; Shambrook & Roberts, 2011). Despite this, women are often underrepresented in positions of research administration leadership (Slocum et al., 2010) in roles with titles such as Executive Director of Research Administration, Executive Director of Sponsored Programs, University Director of Sponsored Projects, or Associate Director for Research.

Scholars in the UK describe research administration as an emerging occupational identity that merits further study (Allen-Collinson, 2007; Allen-Collinson, 2009; Shelley, 2010). Research administrators bridge the divide between academic and administrative work (Allen-Collinson, 2007; Reardon, 2021) and sometimes perceive that their academic colleagues don't respect their contribution to the research process (Shambrook, 2013; Shambrook & Roberts, 2011). Despite this, research administrators desire to be seen as professionals by the researchers they support (Allen-Collinson, 2009; Spencer & Scott, 2017) Shelley (2010) asserts that an increased understanding of the changing roles of research administrators will enhance working relationships with researchers and optimize research activity and output (Shelley, 2010).

Research administration is growing quickly as a profession worldwide (Roundtree, 2021). A study exploring the increasing professionalization of research administration in developing countries in southern Africa notes the importance of defining the research administrator’s function in an emerging research enterprise (Williamson et al., 2020). Similarly, while structures for efficient coordination and governance of research may be traditional facets of Western universities, these elements (including organization structures, policies, and functions of the research offices to support faculty) are still emerging in many developing countries such as Nigeria (Okonji et al., 2018) or Vietnam (Nguyen & Van Gramberg, 2018).

Research administration is rarely described as a simple or low-stress profession (Shambrook, 2010, 2013; Shambrook & Roberts, 2011). Conversely, several studies explore research administrators’ perceptions of the challenges of their jobs. As recently as 2019, studies found relatively high retention in research administration professionals and found perceived support from supervisors and upper management pivotal in a research administrator’s decision to leave an institution or stay (Langley & Heinze, 2009; Welch & Brantmeier, 2019). Contradictorily, another study found a high prevalence of burnout among research administrators (Tabakakis et al., 2020). Several scholars recommend further research to examine approaches to improve the psychosocial work environment, employee appreciation, and stress resiliency for research administrators.

A study exploring organizational citizenship behavior (referring to an employee's willingness to engage in actions outside of their formal job description) in research administrators finds that length of tenure at a research university is a significant predictor of a research administrator's likelihood to engage in organizational citizenship behaviors (Medina, 2021). Furthermore, Medina (2021) recommends that research administration leaders promote the value of tenure in their employees by enacting initiatives that encourage longevity at the institution.

In an ever-changing field, research administrators need to stay abreast of current regulations, predicating the importance of developing new skills and maintaining existing ones. In the reference text "Research Administration and Management" (Kulakowski & Chronister, 2011), practitioners assert the three most important qualities of a research administrator. First, a research administrator must be able to assess and interpret data from a multitude of different sources (such as sponsor requirements, institutional policies, or compliance regulations). Secondly, a research administrator must communicate clearly, succinctly, and often (with sponsors, researchers, external collaborators, and internal colleagues). Finally, a research administrator must exhibit creative problem-solving with honesty and integrity (by finding innovative solutions, answering vague questions, and resolving issues and concerns). Furthermore, these skills must be learned on the job, as formal professional preparation programs or degrees in research administration are few (Kulakowski & Chronister, 2011).

Because the recognition of research administration as a professional field is still in its infancy, studies into the professional development of research administrators are sparse. One study explores professional development of clinical research administrators in a medical school setting by examining the benefit derived from both the institution and administrator after implementing a competency-based assessment model. Similarly, a performance-based assessment tool was developed in response to perceptions of unclear performance assessments in a hospital setting (Johnson & Bullard, 2020). A study on research administrative burden recommends increased training opportunities for research administrators to alleviate the perceived difficulty of supporting faculty members (Leyland et al., 2020). Notably, the three studies into professional development and assessment for research administrators all took place in a medical setting (in these cases, a medical school or hospital). A sizable gap remains in research exploring the desire for or impact of professional development opportunities for research administrators in an academic university setting. Furthermore, very little research examines how professional development impact may vary among different institutional types.

A recent study asserts the importance of mentoring frameworks for the development of research administrators, noting that both mentors and mentees stand to expand their knowledge and deepen their impact in the field (Mullen, 2009). Another study (Schaller-Demers, 2015) explores the need to prepare research administrators to confront ethical dilemmas in their work. Schaller-Demers (2015) recommends that research administrators develop the ability to recognize ethical conflicts; gain thorough knowledge of institutional, sponsor, and government guidelines and regulations concerning the ethical conduct of research; and identify who to call on for advice to implement the best solution in an ethical impasse.

Research Administration Effectiveness

Limited research has been conducted on the effectiveness of research administration services, practices, and processes. Recent studies assess the need for additional administrative support in departments left without proper research support or oversight (Zink, 2018) and explore how departmental research administration structure can combat high workloads and reduce administration burden (Leyland et al., 2020). In one recent study, departmental research administrators observe that faculty spent an excessive amount of time on pre- and post-award tasks rather than active research. The department established a quasi-central research office model to help define roles and improve procedures for both pre-award and post-award processing (Leyland et al., 2020). In another study, departmental research administrators standardized research support systems, such as websites, funding announcements, and proposal toolkits, to alleviate the discomfort of departments faced with inadequate research support.

Some evaluation studies assess the effectiveness of the pre-award functioning through the lens of faculty perceptions of customer service (Marina et al., 2015; Martin, 2021). These mixed method studies examine both quantitative metrics to document pre-award outputs (for example, number of proposals submitted or percentage of proposals awarded) as well as qualitative feedback to delve into faculty perceptions of the purpose and success of pre-award services. These studies point to the perceived importance of further developing metrics to quantify research administration success to leverage competitive advantage against research peers (Marina et al., 2015; Martin, 2021).

Another study focuses on faculty perceptions of the support faculty received when pursuing administratively demanding collaborative research opportunities with other institutions (Deitz, 2011).

An evaluation to inform the restructuring of the research support office of two institutions (a British university and an Australian research organization) observes that researchers often lack awareness and understanding of the purpose of research support services, suggesting that increased communication and messaging would help to build credibility and trust (Langley & Heinze, 2009). This study also notes the importance of upper management support to define roles, support staff recognition, and implement training programs and career planning for research administrators.

Staff Job Satisfaction in Higher Education

While university faculty and instructor perceptions of job satisfaction are frequently studied, staff perceptions of job satisfaction remain relatively opaque. The Higher Education Research Institute, a research organization on postsecondary education housed in the University of California, Los Angeles, administers the Staff Climate Survey (SCS) annually to explore staff perspectives and experiences at institutions of higher education. The 2019 SCS survey reports that 73.5% staff are satisfied or very satisfied with their job, while a minority of staff feel neutral (14.3%) or dissatisfied or very dissatisfied (12.2%) with their job (Couch, 2019). Furthermore, the 2019 survey data suggests that two strategies to support overall job satisfaction is to pay staff competitive salaries (thereby increasing staff salary satisfaction) and to recognize staff for their contributions (thereby increasing the extent to which staff feel their contributions are valued by their units). The 2020 SCS survey explores other elements of campus climate for staff, such as respect for staff and work capacity (Couch, 2021). Almost all staff (94.0%) feel that students respect staff, while a lower percentage of staff (71.1%) feel that faculty respect staff. Fewer still (68.3%) feel that senior administrators respect staff. Work capacity is also a source of perturbation for higher education staff, with many staff (52.6%) sharing that competing priorities and deadlines were a source of stress within the previous year (Couch, 2021). The 2021 SCS survey (and the most recently published report) explores the intersection of work location and agreement about campus decisions, as well as changing job perceptions (Martin, 2022). Staff who worked remotely during the COVID-19 pandemic were more enthusiastic about senior leadership's decisions regarding university operations (in terms of agreeing that the decision-making processed weighed the health and safety of staff and that university leadership communicated with campus constituents effectively) than staff who worked on campus or worked in hybrid arrangements (combination of on campus and remote) (Martin, 2022). The pandemic also affects staff perceptions of job duties, with 60.2% sharing that their job duties have shifted. While nearly all staff (96.9%) report confidence in their ability to fulfill their job duties adequately, almost half (43.6%) also report concern about job security (Couch, 2021).

A study exploring retention in institutional researchers reveals that job growth opportunities and participation in decision making help employees feel effective and supported, while the lack of these opportunities make them consider vacating their positions. Institutional researchers, like research administrators, must learn on the job because there are so few formalized educational routes to prepare for the field. Because of this, experienced institutional researchers require years of on-the-job training; better still are those who stay with an institution long enough to acquire institutional knowledge and insight (Knight & Leimer, 2010). Figuera (2015) finds that a scarcity of positive job attributes (such as employee engagement, organizational commitment, sense of value, growth and development opportunities, and compensation) precedes low staff retention at institutions of higher education. Authentic leadership, on the other hand, can increase employee engagement and thereby reduce turnover intentions (Azanza et al., 2015; Reed, 2021). Jo (2008) maintains that the three top reasons for female employee turnover at institutions of higher education include supervisor incompatibility, limited growth opportunities, and unfavorable work schedule. Recent scholarship points to the importance of career advancement opportunities to retain higher education employees (Figueroa, 2015; Jo, 2008; Walker, 2017).

Self-Determination Theory

Self-determination theory (SDT) is a broad framework for the study of human motivation (Deci et al., 2017). With roots in research on intrinsic and extrinsic motivation, SDT is constituted of several “mini-theories” (Deci & Ryan, 2002), including *cognitive evaluation theory* (exploring the social contexts of intrinsic motivation), *organismic integration theory* (concerning the dynamics of extrinsic motivation), *causality orientations theory* (describing the tendency to seek out social environments that support personal autonomy), and *basic needs theory* (explaining the relation of motivation and goals to health and well-being). SDT has two main tenets. First, humans are growth-oriented organisms who actively seek out challenges to actualize their potential capacities. Second, humans operate in social environments that have the potential to support or undermine a person’s desire to grow and develop (Deci & Ryan, 2000). While SDT has valuable applications in myriad fields, from education to sports to healthcare, its application in the workplace elucidates our understanding of work motivation and management. SDT links the concerns of organizational performance and employee wellness by suggesting that both are impacted by the type of motivation that employees have for their job activities (Deci et al., 2017).

SDT posits that the social environments that facilitate optimal human functioning and natural propensities for growth must fulfill the three psychological needs of *autonomy, competence*, and *relatedness* (Deci & Ryan, 2000). Autonomy is defined as experiencing a sense of choice and acting with your own volition; relatedness involves experiencing the feeling of belonging and building a sense of community; and competence centers on experiencing feelings of mastery and effectiveness (Broeck et al., 2010; Gagné & Deci, 2005). Environments and conditions that satisfy these three needs enable a person to function optimally while also experiencing feelings of well-being and satisfaction (Broeck et al., 2010; Deci et al., 2017; Deci & Ryan, 2000; Gagné & Deci, 2005). Conversely, situations with low levels of autonomy, relatedness, or competence are associated with poorer performance and well-being (Deci & Ryan, 2000).

Literature Synthesis

Research administration is such a new and evolving field that scholarship continues to assess, describe, and redefine what activities and responsibilities research administration includes. Our understanding of the expectations of research administrators has expanded enormously since its inception as a profession sixty years ago. As worldwide research expenditures grow larger and research regulations grow progressively more complex, the responsibilities of the research administrator only stand to increase concurrently (Kulakowski & Chronister, 2011).

Research administrators work in a variety of settings, from universities to hospitals to research organizations. Even within a single institution, research administration responsibilities differ if the administrator is in a central or departmental setting. Research administrators support, coordinate, and manage several aspects of the research process (Derrick & Nickson, 2014; Reardon, 2021). The strains of a supporting function are evidenced by research administrator perceptions of a lack of respect and appreciation from the researchers they support (Shambrook, 2013; Shambrook & Roberts, 2011). Similarly, the stresses of the job lead to research administrator burnout and turnover (Tabakakis et al., 2020). Tools for the development of research administrators include performance management assessments, competency-based assessments, mentoring, and training for ethical decision-making (Deeter et al., 2020; Johnson & Bullard, 2020; Mullen, 2009; Welch & Brantmeier, 2019).

Several studies on university research administrators take place outside of the United States in other Western countries (Allen-Collinson, 2007; Allen-Collinson, 2009; Kerridge & Scott, 2019) and in developing nations (Nguyen & Van Gramberg, 2018 Okonji et al., 2018; Williamson et al., 2020). These countries rely on different higher education structures and supports than are found in the United States, which will influence the expectations and resources of the research office.

The limited research into research administration effectiveness focuses on measuring effectiveness by outcomes: counting how many proposals a research administration office submitted or recounting faculty experiences with research administration customer service. Existing studies aim to learn more about improving effectiveness by focusing on a consequence or a symptom of research administration effectiveness (Langley & Heinze, 2009; Marina et al., 2015; P. S. Martin, 2021; Zink, 2018). Notably, very few studies examine research administration effectiveness as a function rather than an output.

Staff at institutions of higher education are generally satisfied with their jobs (Couch, 2019; Issah, 2021). Staff members value opportunities for growth (Figueroa, 2015; Jo, 2008; Knight & Leimer, 2010; Walker, 2017), authentic leadership (Azanza et al., 2015; Couch, 2021; Jo, 2008; Reed, 2021), and opportunities to participate in decision making (Couch, 2021; Knight & Leimer, 2010). Other strategies to improve staff job satisfaction include higher salaries and more opportunities for recognition (Couch, 2019).

Self-determination theory (SDT) examines how the quality of a person's motivation affects their performance and well-being. In environments where a person experiences autonomy, competence, and relatedness, they are likely to perform better, learn better, and experience stronger feelings of satisfaction and well-being (Deci et al., 2017). Situations that thwart these three basic needs lead to a plethora of negative consequences (Gagné & Deci, 2005).

Research on organizational effectiveness tends to focus exclusively on the organization (i.e., their outputs and products) or on individual employees (i.e., on their well-being) (Gagné & Deci, 2005). Conversely, this study aims to explore research administrator job satisfaction with a goal to focus on the inputs that lead to research administration effectiveness. Evaluating a program through the lens of self-determination theory provides the conceptual framework to guide the formation of processes and environments that positively impact both the organization and the employees (Deci et al., 2017). The literature reveals a sizable gap in empirical research in the field of research administration with considerable room to contribute to an emerging field.

Chapter Three: Methods and Methodology

The evaluand for this dissertation was the Sponsored Programs Administration (SPA) team in the Office of Research and Sponsored Programs (ORSP) at the University of Denver (DU) and how the SPA team described elements of their jobs that affect job satisfaction. The SPA team is a part of the central research administration office – the Office of Research and Sponsored Programs (ORSP) – and is responsible for providing grant pre-award and post-award research administration services to the research community at DU. Through the lens of self-determination theory, the evaluation identified and explored elements that affect the SPA team members' satisfaction in their job. The elements that affect the SPA team's job satisfaction were evaluated with a general qualitative study (Merriam & Tisdell, 2015) because the general qualitative study is a strong tool to explore how people interpret their experiences and what meaning they attribute to their experiences.

Evaluation Questions

1. How do research administrators in the Sponsored Programs Administration (SPA) team at the University of Denver describe their work?
2. What elements of the work affect the SPA team's perceptions of job satisfaction?

Research Design

The program was evaluated with a general qualitative study (Merriam & Tisdell, 2015). The general qualitative study approach was selected to explore how the research administrators on the Sponsored Programs Administration team to understand their experiences as research administrators and the meaning the participants ascribe to those experiences.

Site Selection

The program evaluation took place at the University of Denver in the fiscal year 2023 (FY23) from October 2022 to April 2023 in the Sponsored Programs Administration (SPA) team in the Office of Research & Sponsored Programs (ORSP). The SPA team is an active unit whose functions pre-date the start of the evaluation period and continue after the end of the evaluation period. This formative evaluation took place during the evaluation period stated above.

The SPA team was chosen as the evaluation site both as a function of convenience and relevance. During the evaluation planning period, I was one of the grant administrators on the SPA team and planned to evaluate the team as a member of the team myself. However, shortly before data collection began, I accepted a job in another unit at the University of Denver, so my time as the SPA team member ended. Fortunately, I maintained ready availability to the participants of the study. I was in close virtual proximity to all study participants because all interviews were conducted by Zoom. More importantly, I had accessibility to interview participants because of the close working relationships that we had developed when I was a team member (this is discussed in further detail in Data Collection). Furthermore, the participants were theoretically relevant to the study because they are research administrators who can share their perspective on the nature of the work and how elements of the job affect their perceptions of job satisfaction.

When data collection began, the SPA team consisted of one director and four grant administrators who reported to the director (not including myself because I had already left the team). All five team members were invited as program participants. One of the five team members declined the interview invitation. In total, four SPA team members agreed to be evaluation participants.

During data collection, one of the team members accepted a job at another institution and left the SPA team. She still participated in the study to share her perspectives on the nature of the work and how those elements of the work affected her perceptions of job satisfaction on the SPA team.

Data Collection

The sources of evidence for this program evaluation were interviews with four members of the SPA team. The interview data was cataloged and stored in a study database. Field notes that I took during data collection and data analysis were included as a component of the database.

Interviews

Interviews are the most common form of data collection in applied fields like higher education (Merriam & Tisdell, 2015). In this study on perceptions of job satisfaction, I conducted interviews with participants to learn about their personal views on elements that influence their job satisfaction. The interview data were critical sources of evidence.

Interview requests were sent to the four research administrators on the SPA team for one (1) seventy-five-minute interview. All interviews were conducted by Zoom to make the interviews accessible and private and to facilitate the audio recording process.

Interviews were semi-structured based on the interview protocol questions developed for the interview process; interviews followed a loose script but allowed for follow-up or clarifying questions.

Single interviews were scheduled for ninety minutes to allow for fifteen minutes to get settled and for seventy-five minutes of interview questions. All interviews took the full time allotted. Each participant consented to be audio recorded during their interview. This allowed me to be present and responsive to small details like tone and body language during each interview.

Following each interview, I transcribed the audio recording by hand. Transcribing the audio data myself not only protected participant privacy (because I was the only person who conducted interviews and transcribed audio data), but also afforded me the opportunity to start reflecting on the interview content as I worked through the data. During the transcription process, each participant was assigned a randomly generated pseudonym. Each transcription was completed within seven days of the interview, at which point the audio recording was deleted. Each participant was given the opportunity to review and edit their answers for accuracy for member checking.

Semi-structured interview questions examined the elements of the job and how those elements affect perceptions of satisfaction. The questions centered around the descriptive framework provided by self-determination theory and provided a loose structure to explore how the presence (or absence) of feelings of the three basic needs of autonomy, competence, and relatedness supported (or hindered) job satisfaction.

When I planned the evaluation, I intended to use an inside evaluator's perspective as a member of the SPA team. However, by the time data collection began, I was no longer on the SPA team and therefore no longer an insider. I feel more authentic describing what I brought to the evaluation not as an insider's perspective, but as an "emic" perspective. The emic perspective (and its counterpart, the etic perspective) has roots in linguistics and anthropology, and the accepted meaning and intention of its use has evolved over time (Mostowlansky & Rota, 2020). However, its current understanding can provide context for a qualitative evaluation. The emic perspective is culture-specific; a person with an emic perspective can understand and speak the language of the culture (Buckley et al., 2014). Therefore, while I was not an inside evaluator, I brought an emic perspective to my evaluation, which afforded me a unique understanding of my participants and their experiences.

A conversational interview style also helped to address any perceived power differential between me and my participants. As the researcher who interprets and reports the data that I collected from participants, I hold a certain amount of power in how I chose to analyze and communicate the results. Oakley (1981) suggests that an interviewer can share aspects of their own identity and story with a participant during the interview to create a more reciprocal experience and thus to overcome a power imbalance. Because I had an established relationship with participants, it was natural and easy for me to share aspects of my identity and my stories with participants; in most instances, I didn't even need to share my stories to build trust because I already had a trusting relationship with participants established.

Field Notes

To aid in the data analysis process, I wrote extensive field notes to myself during the data collection process to preserve initial interpretations of the data that I had in real-time (Merriam & Tisdell, 2015). I also took field notes during data analysis to document how my interpretations and sense-making of the data evolved. I generated a few field notes during the interviews with participants, but I wrote most of the field notes during my own reflections on the data.

Data Analysis

My analytic strategy was to organize the study around self-determination theory as the theoretical framework (Merriam & Tisdell, 2015). In this approach, the three topics of self-determination theory (autonomy, competence, and relatedness) informed data collection as well as data analysis. I began an informal data analysis as I transcribed the participant interviews. Then, I coded the data using both deductive and inductive coding. From this coded data, I identified the themes of the data.

Transcribing

I conceived of transcribing the interview data as both a part of data collection and data analysis. Following each interview, I transcribed the audio recording by hand. Transcribing the audio data myself afforded me the opportunity to start reflecting on themes as I worked through the data. I took field notes as I moved through the audio recordings to capture my interpretations of each participant's tone, intent, and insinuations. I noted where I thought participants phrased their opinions delicately and areas where I suspected participants left some things unsaid. I only realized that I had started to analyze the data during my second transcription, when I noticed the vague shapes of patterns emerging. Although the transcription was not a formal part of my data analysis, I was starting to make sense of the data and to explore what themes helped to understand the phenomenon.

Coding

After completing the transcriptions of the audio data, I began coding the data. While I began to make indistinct connections during the transcription process, coding the data allowed me to make the connections more systematic and precise (Kvale, 2007). I used the data analysis software NVivo to help classify and sort the codes that I identified in the data. I used a blended coding approach, or a combination of deductive and inductive coding.

Deductive Coding. I began with deductive codes derived *a priori* from the theoretical framework of self-determination theory. This generated a relatively limited number of codes to explore experiences associated with feelings of autonomy, relatedness, and competence, experiences that supported those feelings, and experiences that hindered those feelings. This deductive approach helped to focus on the participant experiences most relevant to the theoretical framework (Linneberg & Korsgaard, 2019). However, I felt that relying solely on *a priori* codes might prevent me from identifying interesting differences that emerged more organically from the data. Furthermore, *a priori* codes were less effective to generate codes to understand the nature of the work of a research administrator. Therefore, to further enhance my understanding of the data, I moved next to inductive coding.

Inductive Coding. My next rounds of coding utilized an inductive approach in which I developed codes directly from the data (Linneberg & Korsgaard, 2019). I used words or phrases as codes that participants themselves had used. This generated an enormous number of codes which were very precise and specific. Initially, this helped me to appreciate the complexity of the data. From these hundreds of codes, I began another coding cycle by looking for similar categories, or instances where participants had described a similar task, experience, or feeling but used different language to convey it. I developed another set of higher-level codes that categorized and summarized the specific codes (Kvale, 2007). From these higher-level codes, I eventually discerned themes within the data. From these broad themes, I returned to information derived from the deductive codes. I cycled back and forth several times between the data from the deductive and inductive coding to note the similarities and differences. As I completed the blended coding process, several themes emerged from the data. The themes and findings from data analysis will be discussed in the results section of the dissertation.

Trustworthiness

Trustworthiness is an important element of qualitative research in terms of internal validity, external validity, and reliability (Merriam & Tisdell, 2015).

Internal validity

Internal validity is the extent to which the research findings are congruent with reality (Merriam & Tisdell, 2015). Though a constructivist qualitative researcher can never capture "reality" because constructivists assert that reality is subjective (Adom et al., 2016), there are ways to increase the credibility of the research. Because the purpose of qualitative research is to understand the phenomena from the perspective of the participant, only the participant can judge the credibility of the results. Therefore, I used member checking in the data collection phase to allow participants to check for accuracy and account for the internal validity of the study. Furthermore, this practice helped to alleviate any perceived power balance between me and the participants. Because I already had relationships established with participants, I am confident that they felt comfortable enough to alert me if I misinterpreted their intended message.

My integrity as a qualitative researcher has also influence on the credibility of the research (Merriam & Tisdell, 2015), because the researcher acts as the research instrument in a qualitative study. My perspectives, biases, and assumptions influenced how I conducted the research and the conclusions I drew. Therefore, I included a positionality statement to help readers better understand how my identity influenced my decisions and conclusions as the researcher.

External validity

External validity is the extent to which the findings of the study can be generalizable to other similar situations (Merriam & Tisdell, 2015). I addressed the external validity of the study by describing the research context and assumptions as thoroughly as possible. While generalizability is subjective and dependent on each specific study, a highly descriptive context increased the transferability of the research. I described the context of the study (including institutional characteristics, research volume and growth, and mission and goals) so that readers may gauge how transferable the findings of my evaluation are to their own situation.

Reliability

Reliability is the extent to which study findings can be replicated (Merriam & Tisdell, 2015). However, the replication of a qualitative study will not necessarily yield the same results because human behavior is never static. Furthermore, if another evaluator asked my same evaluation questions to my same study participants, they may receive different responses or glean different interpretations from these responses than I would as an evaluator. Rather, I addressed the reliability of the study by maintaining an audit trail, or a clear delineation of how the evaluation questions led to the study protocol, which generated the data in the study database, which led logically to the findings and conclusions (Merriam & Tisdell, 2015). I maintained a clear record of how my evaluation questions helped to generate the interview questions. From there, I clearly linked these protocol steps to the data I collected (while maintaining participant confidentiality). I organized this information in the study database. From this evidence, I drew my conclusions and recommendations. I took several field notes during data collection and data analysis to document my reflections, questions, problems, and decisions throughout the study. This clear, step-like approach demonstrated the reliability and repeatability of the study (Merriam & Tisdell, 2015).

Study Significance

The literature review exposes a demonstrable gap in the emerging field of research administration, whose growing importance will only accelerate in the coming years. The study expanded on the limited existing literature that explores job satisfaction as experienced by research administrators. Through the lens of self-determination theory, the evaluation identified and explored the various elements that contribute (both positively and negatively) to the perceptions of job satisfaction as experienced by the SPA team. Identifying and understanding the elements that affect the SPA team's perceptions of job satisfaction will better equip decision makers at the University of Denver (both at the unit level and university level) with information on how by enhance the positive elements of the work and to mitigate the negative elements of the work. With new expectations from the R1 status and the anticipated further expansion of research activity that requires more administrative support, the performance and retention of DU's research administrators is critically important. The goal of the study was to develop strategies to increase the Sponsored Program Administration team's job satisfaction to improve employee performance, retention, and well-being.

Positionality

> This book is about a single problem: how to combine the perspective of a particular person inside the world with an objective view of that same world, the person and his viewpoint included. It is a problem that faces every creature with the impulse and the capacity to transcend its particular point of view and to conceive of the world as a whole. (Nagel, 1986, pg. 3)

In his philosophical exploration "The View From Nowhere," Thomas Nagel (1986) contends that truth about our world is generated through the complementary coexistence of subjective and objective perspectives. As a person, I have a particular point of view, or a subjective perspective. I inhabit my body and think my thoughts, which provides me a unique but inherently narrow perspective. Nagel asserts that a person has the ability to transcend the confines of their subjective perspective to think about the world in a detached manner. This "view from nowhere" frees a person to introduce an objective perspective into their worldview.

I initially struggled to approach my positionality statement. I didn't feel like I had positions of note. My positionality seemed unremarkable: I'm a research administrator at a university and I'm writing about perceptions of job satisfaction in university research administrators. Why do elements of my identity matter beyond that?

For the moment, I'll sidestep the question of whether holding a truly objective perspective is even possible for a person (or rather, for me). It seems more important to state that at this point in my life, I won't purport to have an objective perspective. The ostensibly unbiased viewpoint of the disembodied "view from nowhere" may inspire confidence in others, but to me can feel hollow and impersonal in certain contexts. In Nagel's terms, my capacity for objectivity is irrelevant because I lack the impulse to "transcend" my particular point of view.

This is not to say that I want my point of view to stay fixed forever. On the contrary, growth is a value that I value and cherish most in life. I expect my perspective to expand and deepen as I encounter situations that I don't understand, confront values that I don't share, or seek to understand those with whom I don't agree. My perspective may change drastically as my knowledge and experiences accumulate over the course of a lifetime. Nevertheless, my perspective is bound to me and I to it like a shadow: sometimes imperceptible, sometimes a friendly companion, and sometimes a distorted specter.

Acceptance of my subjective viewpoint leads me to the constructivist paradigm and a qualitative study (Adom et al., 2016). Therefore, I serve as the primary instrument through which the study will be administered (Merriam & Tisdell, 2015). In their discussion on the researcher-as-instrument phenomenon in qualitative research, Pezalla et al. (2012) assert that "qualitative researchers are *differently calibrated instruments*" (p. 182, emphasis in original). If another evaluator asked my same evaluation questions to my same study participants, they may receive different responses or glean different interpretations from these responses than I would as an evaluator; different calibration of the research instrument (i.e., the self in comparison to any other self) explains why.

Elements of my identity informed how I conceived of my study and planned my study. Similarly, my identity informed how I interacted with study participants, judged data as relevant to my evaluation questions, and executed the data analysis process. Therefore, understanding these elements of my identity are critical to a reader's understanding of the instrument and its current calibration.

Research administration is my current profession. I'm writing about research administrator job satisfaction because I think what brings research administrators satisfaction in our jobs is relevant and important, not only to me and my colleagues, but also to our institutions. I'm framing this dissertation with decision makers at our institution as stakeholders because I trust that they care about what matters to research administrators (and staff at the institution in general). If they don't care already, I believe that it is in their best interest to care, both for the well-being of their employees and for the institutions they serve.

I became a research administrator as I've heard (albeit anecdotally) many people do: I fell into it. My best guess is that I was hired not because I had any experience in the field, but because I had experience and knowledge that were loosely transferable to the position. I had worked for 18 months as an administrative assistant at my university, working closely with faculty by helping them with administrative tasks that they found too cumbersome or obtuse. I also had a passable knowledge of accounting principles from a master's degree in business administration (MBA). This combination of working with faculty and knowing something about accounting brought me to my first position in research administration. I didn't grow up planning to be a research administrator or study in college to be a research administrator, but hardly anyone does – not enough people know about the field to think about it as a career option, and hardly any available educational opportunities to train for it in a formal setting. This experience of "falling into it," or happening on the job by accident, is ubiquitous among my colleagues.

I'm a woman. All the people in my study happen to be women because all my colleagues on my team are women. I believe that women may value different elements in a job than a man might and so my study will be reflective of the things that these women value. I don't consider it a study limitation that there are no men in the study sample, as I think there are too few opportunities to hear and understand women's perspectives and values.

Gender is just one element of my identity. The various facets of a person's identity influence what elements of a job are more or less important to them and affect the intensity of their preference for them. For instance, there may be elements of a job that matter more to a person of color, but I cannot identify these myself because I'm not sure these issues exist in the same way for me as a white person.

I grew up in an upper middle-class family and never had to worry about paying for college. I have no conception of the hardships of student loans because I never had any. I never considered why student loans might impact job satisfaction until one my colleagues mentioned that working at an institution that qualified her for student loan forgiveness was a perk of the job. This comment solidified my passion for the study because it was just one small illustration of how job satisfaction may look different for everyone. It also indicated (as most things do when you approach them with a growth mindset) how much I still have to learn. As the instrument of this qualitative study (Adom et al., 2016), I constantly engage in the iterative process of calibration.

Limitations and Considerations

Participation in the study was voluntary, so participants were free to decline to participate or to halt their participation at any time. To alleviate any concerns about negative repercussions from study participation, the invitation to participate emphasized several important details: that the data collected would be kept confidential; that each participant would have the opportunity to review the collected data to ensure that it was a true reflection of their perspective; that each participant would be assigned a pseudonym; and that I would take the utmost care that no participant was "singled out" in the analysis and reporting process. Nevertheless, one of the proposed participants declined to participate in the study. Furthermore, one participant accepted another job and left the SPA team during data collection (but still participated in the study). I noted both the declination and the departure in the data collection section.

A reflexive threat existed in the study because I already had an existing relationship with the study participants. However, an awareness of the threat helped mitigate its effects in the study. To increase awareness further, I shared the possibility of the reflexive threat stemming from the existing relationship with participants before their interview took place. I mention the reflexive threat as a possible limitation, although I see the same circumstances that posed a reflexive threat as those that provided a unique strength to the study. My interviews were filled with laughter and reflections on the times that participants and I shared together as teammates. Participants told me the aspects of their work that was exciting, rewarding, fulfilling, and fun. In the next breath, participants confided their experiences and reflections on struggles, misunderstandings, challenges, and fears. I am certain that the trust that I shared with study participants was an asset in crafting a clearer and more nuanced portrayal of the study.

The study is qualitative and therefore the findings are not commonly considered generalizable. While generalizability is subjective and dependent on each specific study, the highly descriptive study context provided in Chapter 1 should increase the transferability of the research.

This study examining the Sponsored Programs Administration team at the University of Denver and their perceptions of job satisfaction enlightens our theoretical understandings of self-determination theory applied to a work setting and informs best practices for promoting satisfaction and performance for research administrators.

Chapter Four: Findings

This chapter discusses the findings related to the job experiences of research administrators on the Sponsored Programs Administration team and their perceptions of job satisfaction. This program evaluation aimed to answer two evaluation questions:

1. How do research administrators in the Sponsored Programs Administration team at the University of Denver describe their work experiences?
2. What elements of the work affect (or lead to) job satisfaction?

The findings illuminated the nature of the work of a research administrator on the SPA team and how this work affects job satisfaction through the three themes that are organized based upon the theoretical framework of self-determination theory: autonomy, relatedness, and competence. First, I will provide a rich description of the nature of work for research administrators on the SPA team. Second, I will offer findings based upon the themes as identified by the theoretical framework.

Part 1: Nature of the Work

The nature of the work of a research administrator can be broadly conceived in two parts: the job functions that a research administrator carries out and the work environment in which a research administrator operates. This description is offered to illustrate the work of a research administrator to provide context for how these work experiences affect participants' feelings of autonomy, relatedness, and competence, as discussed later in the chapter.

			Eliza	Nora	Cynthia	Celeste
Job functions	Communicating		X	X	X	X
Job functions	Helping and supporting		X	X	X	X
Job functions	Problem solving		X	X	X	
Job functions	Training		X	X	X	
Work environment	Organizational environment	Policies	X	X	X	X
Work environment	Organizational environment	Purpose			X	X
Work environment	Physical environment	In person	X	X	X	X
Work environment	Physical environment	Remote	X	X	X	X
Work environment	Physical environment	Hybrid	X	X	X	X
Work environment	Working conditions	Varied work	X	X	X	X
Work environment	Working conditions	Heavy workload	X	X	X	X
Work environment	Working conditions	Changing job responsibilities	X	X	X	X
Work environment	Working conditions	Learning on the job	X	X	X	
Work environment	Working conditions	Breadth and depth of knowledge required	X	X	X	X

Graph of Part 1 Findings

Job functions

A job function is a task performed by an employee that constitutes the main responsibilities of their job. The job functions of a research administrator consist of four major categories: communicating, helping and supporting, problem solving, and training.

Communicating. Communication is a large part of the role of a research administrator. Research administrators must communicate with several different stakeholders, including researchers who are submitting proposals, researchers who are managing active external awards, department administrators, other central university units, collaborators, sponsors, and other department members.

Researchers who are submitting proposals. Researchers who submit funding proposals must prepare proposal materials. Research administrators communicate frequently with researchers who are preparing proposals concerning proposal preparation questions, sponsor guideline interpretation, and other pre-award guidelines and best practices. Cynthia recounted the importance of clear communication as she helped a researcher who was submitting a proposal:

> There are a lot of situations, even in the proposal review process where, it's not very clear, you know? Something's presented in a budget that's really on the line of allowable or unallowable and so PIs [principal investigators] rely on you to get it right, [to] word it correctly. And [to] make sure that I'm on the same page as them as what we're talking about. So there's just a lot of – I don't know, there's a lot of room for miscommunication and error at times.

With a wry chuckle, Celeste shared that the team prioritizes submitting proposals, but that researchers can have unreasonable expectations when submitting a proposal to the SPA team for review and approval shortly before a submission deadline. She confided, "We always want to get proposals submitted, but – there are times when we have some challenging circumstances where we're getting last minute proposals. And it puts a strain on my team."

Researchers who are managing active external awards. Researchers who have successfully secured external funding must manage their award. Research administrators answer questions about the reasonability and allowability of expenditures, the proper documentation of expenditures, reporting schedules and content, and other post-award guidelines and best practices. Eliza explained the tasks required when communicating with a PI about an award, which research administrators refer to as “post-award”:

> Post-award feels to me bigger [than pre-award]. There’s a lot more things to do and a lot of different ways to do them. So post-award, being after the award’s been issued to [the institution], setting up the award in our financial system of record, talking with the PI about – and the department administrator about – alerting them, letting them know [the award is] open, keeping an eye on charges, invoicing, [and] making sure we get paid for the work that’s been done.

Department administrators. Department administrators are research administrators housed in an academic unit. They are one step closer to researchers and provide another layer of support to researchers. Research administrators communicate regularly with department administrators on both pre- and post-award matters. Like Eliza, Celeste also asserted that her post-award duties take up more time than pre-award. She noted the amount of coordination that these tasks demand, which includes department administrators:

> I would say a majority of my time gets spent on post-award? Just because a big part of our role[s] and responsibilities tend to be what happens after a proposal is submitted. There’s a lot that goes into coordinating with departments.

Other central university units. Other central university units handle administrative functions that affect sponsored programs proposals and awards, including Payroll (paying employees on grants), General Counsel (handling complex legal and contractual issues related to grants), Accounting (monitoring payments to and from grants), Procurement (procuring goods and services to accomplish the objectives of the grant), and Human Resources (regarding HR policies that affect work accomplished on grants). Research administrators communicate with other central university units to get their insight when dealing with a complex issue regarding their area of expertise. Sometimes these interactions are strained; Cynthia recalled her recent dismay at an interaction with another central university unit. The unit was asking for documentation for an external audit the day before the winter holiday with very little turnaround time in a manner that Cynthia found displeasing:

> After 4pm, Wednesday, December 21, [another central university unit] sent requests over for things. The university was closed on Thursday because of the weather. So one day before Christmas break, we're getting yelled at – [my manager]'s getting yelled at by [the other central university unit] for not providing these things in time… Yeah, they wanted them by that day. They wanted them in one day, literally. But it's like, why did [my manager] have to be the one who got yelled at, right? That made me mad.

Collaborators. Researchers may collaborate with other scholars on proposals or active awards. Collaborators may come from other universities, non-profits, school districts, or for-profit companies, to name a few. Research administrators coordinate communication with collaborators and their supporting staff. Cynthia described the process of drafting subaward agreements, the contracts with which the institution formalizes collaborator responsibilities:

> Also I worked on subawards, so, that in itself was like – mostly post-award but – creating agreements that we're sending out to institutions and consultants and – that has a lot that goes into it as well, with – subrecipient monitoring and audit requirements – and, just making sure, you know, we're getting things right because we are sending money, a *lot* of money out to other entities and making sure we're protected.

Sponsors. Sponsors are the bodies that review proposals and grant awards. Research administrators communicate with sponsors to submit proposal materials, ask clarifying questions, submit reports, and request or make payments. Sponsors may once again be other universities, non-profits, school districts, for-profit companies, government entities (local, state, or federal), or foreign sponsors. Cynthia illustrated the wide variety of sponsors with whom a single research administrator worked:

> I worked mainly with federal entities, so federal sponsors, mostly NIH [National Institutes of Health] and NSF [National Science Foundation], for, I would say, my whole time there but I [have] started to get more state contracts and industry stuff.

Other department members. Outside of the SPA team, the ORSP department has several other functions. Research administrators on the SPA team must communicate with colleagues in their own department, such as Intellectual Property, ORIE (involving research compliance), database administrators (handling electronic research administration systems and other databases that collect or utilize data on research), and senior leadership. Celeste listed several topics about which the SPA team communicates with senior leadership:

> [We have] communication with senior management to let them know of areas where we feel like maybe we don't have the resources we need, we don't have the policies in place that we feel we should. And really just to make sure that [on] strategic initiatives, that we're moving in the right direction for those types of initiatives that are sent out by senior [leadership].

Helping and supporting. Helping and supporting was frequently cited as a common job function for research administrators. No participant used the term "customer service" outright to describe this job function, but the expectations of how to appropriately offer and provide help and support have similar requirements of customer service.

Helping the Sponsored Programs Administration team. The SPA team was a fountain of knowledge that individual team members relied on for advice on issues like how to utilize best practices, how to approach delicate issues of communication, and general support. When a participant was feeling uncertainty about a course of action, they could come to the team to ask them how to approach a problem. A participant may not know how to proceed when initially faced with a problem, but the team would brainstorm and critique possible approaches, weighing the ease of an action taken, the likelihood of accomplishing the end goal, the precedent that would be established, who needed to be involved in the decision or execution of the action, and how to communicate the process or results. With rote actions, a SPA team member could make a determination themselves, but complex situations generated uncertainty. Team member input was a reliable technique to shore up against these feelings of uncertainty. Cynthia confided, "That [perceived] level of competence starts to feel a little dwindling at times when those [complex] situations happen… [but] most of the time, [the decision] is right, because we've consulted with the team." Not only was the team a good source of varied experience, because everyone was working on different types of proposals with different sponsors and PIs, but the collaborative approach engendered a very supportive environment. Cynthia shared, "It's a small team, there's a lot of close communication, so that is a help and provides a space to bounce those questions off of each other." Nora explained that solving problems as a team brought the group closer together:

> Really problem solving together really helps with feeling [related]. [The team is], you know, belonging together, [the team] know[s] what each of you is going through, the problems that you're experiencing, and you're also getting feedback from each other on how to maybe fix an issue, or best practices moving forward, or anything like that.

As she listed her many responsibilities, Celeste paused and acknowledged, "The one thing that I'm always trying to do is make sure that I support my team."

Supporting the DU research community. SPA team members aren't the only ones who needed support. Answering questions is a particularly common function for a SPA team member, and questions come from all the stakeholders listed above. Some questions are routine and easy to answer quickly, while other situations require investigation and critical thinking to solve. A research administrator must balance the needs of the PI (who research administrators are there to serve) with the interests of the institution (which research administrators are there to protect) with the needs of the sponsor (whose money the institution has been granted stewardship of). This means that sometimes “answering” the question is only the second half of the equation; for some questions, a research administrator must first find the answer before they can share the answer with the person who needs it. Eliza explained, “Questions come up that I don’t immediately know the answer to [and I have to] research that and find the answer [and] provide the answer to people.” Nora explained that sometimes the requests to support the research community are outside of her direct responsibilities, but she tries to help anyway:

> [My job includes] a lot of helping and assisting coworkers with questions that come up. Just giving feedback to people about different research related questions or sponsored programs related questions…So it could be people that I'm working with day-to-day in our office, or sometimes you get outside requests that are completely beyond your job that you then have to triage.

Problem solving. Some tasks or questions are routine, allowing an experienced research administrator to approach the problem on their own by drawing on experience. Eliza shared, “Somebody asks me a question [and] I know the answer because somebody’s asked me that questions two years ago or a year ago or fifteen times in the past month.” Other situations required a problem-solving approach to find a solution, which required critical thinking and decision making. Nora similarly commented, “There’s a lot of problem solving that goes into my job.”

Critical thinking and decision making. The problems that arose often demanded critical thinking from SPA team members to identify and evaluate the problem and to brainstorm possible solutions and their attendant ramifications. SPA team members might tap into their existing networks in the institution, with particular reliance on SPA teammates, to check the logical reasoning of their critical thinking process.

With the level of autonomy that the SPA team is afforded, there are situations in which there is not a straightforward answer to a question, requiring a SPA team member to make a decision. This is especially true as the SPA team workload increased, meaning that more problems arose, but less time could be dedicated to ruminating on possible solutions. SPA team members might also experience this when they were tasked with process improvement measures. Cynthia spoke how she was responsible for drafting and issuing the outgoing subawards (those that DU awards to other institutions), which is a fairly specialized aspect of research administration. She was given a lot of leeway to make decisions on how to improve the team's approach to subawards. More broadly, she recalled that she would make a decision because she was most knowledgeable in the department on a specialized subject like subawards:

> I think there are a lot of situations that occur in research administration… – and in [the SPA team] because of our structure, like we've talked about, just lack of time, lack of resources – where it's a best guess situation, so those feel daunting? Because [of] that fear that you did it incorrectly… But there have been so many times when it's like, I'm the best source of knowledge for that thing, and so it's just like, ok, I have to use my expertise, I guess. Use my expertise to make the best decision. So yeah, that's definitely – yeah. Those situations are hard for me because I like being right.

SPA team members were empowered to make and execute several decisions, but they were aware that their decision-making capacity had limits. Eliza explained, "There's a point at which I don't have autonomy to make decisions because they're out of my pay range." In other words, SPA team members were aware that certain decisions were in the hands of senior leadership.

Training. Training was the most surprising job function to come out of the interview data. I was particularly interested in training as it relates to competence because I assumed that continuous professional development was critical to participants' competence and job satisfaction. However, SPA team members were far more likely to recall the experience of when they were first trained, or to talk about the hidden job requirement of training others, than to discuss professional development.

Getting trained. The process of getting trained when a participant first joined the SPA team was very informal. Participants recalled sitting down with a colleague to watch their day-to-day tasks, perhaps taking notes and asking questions. Then, they dutifully went back to their own computer and tried to "replicate" what they just observed. Cynthia remembered her surprise at the training methods utilized when she joined the team:

> When I started, I would sit with one of the other research administrators and just watch what they're doing, go back to my computer and replicate it. There was nothing like a formal training program. I previously worked at [large research institution], and they had a full program, for pre-award. Like, how to review proposals, start to finish. I came in very ignorant, thinking that [the institution] would have the same thing.

Professional development opportunities were sparsely discussed. I was surprised to learn that participants might not care for them, like Nora. She finds most trainings put on by professional research administration organizations too broad and prefers to be self-taught by solving her own problems:

> But [trainings] are never detailed enough for me. I am looking for way more detailed information. Way more nitty-gritty, like – not as much of a broad overview which is what I think that within our profession is kind of what they gear things towards. It never gets into enough detail for me specifically. Like I still cannot find, on anybody's website – and I know that there should be something said about it – Visa gift card fees as related to human subject payments. Like, are fees allowed? There's nothing on Uniform Guidance [federal regulations for grants management] … I feel like there's just not enough information about it. I would be looking for something that specific if I was looking for a training on human subject payments. I would want to know about the $5.95 fee and if it should be tagged with the participant as a gift card fee, or if it should be residing somewhere else in the budget? You know? Like, they're never specific enough.

Training others. The burden of the responsibility to train others came up several times with each participant. Haltingly, and then all in a rush, Eliza confessed how much the responsibility for training weighs on her:

> I feel like training is this huge burden that I – well, I guess, I'll share – that never seems like – we're not prepared – I guess – I don't feel competent to train people but it's an expectation and it takes time and it's hard.

The most basic requirement of training responsibilities was to train new SPA team members. Recent new team members who joined had no prior research administration background and needed to learn the entire craft from scratch. As mentioned above, training methods aren't very sophisticated: participants invite new team members to sit down with them to watch what they're doing.

SPA team members are also expected to train department administrators. Because the institution is so decentralized, there isn't a central training mechanism that department administrators can rely on to learn the craft of research administration. Therefore, a SPA team member might be required to train a new department administrator because they are the best (albeit imperfect) person to do so. Training department administrators may utilize the one-on-one observational method that SPA team members use to train their own team; more informal methods like sending guidance by email or instant messaging tools like Microsoft Teams; or quarterly trainings called "Coffee with SPA" that the SPA team held to share recent topics and best practices with department administrators across campus.

Finally, SPA team members might also be expected to train faculty who are applying for and receiving external awards, called principal investigators (PIs). While research administrators may not have the subject matter expertise to provide technical feedback on a PI's proposal, research administrators frequently provide training and guidance to a PI on topics related to externally funded projects like proposal budgeting (what is allowable and reasonable), proposal formatting and assembly (how to structure proposal information that is readable and responsive to the sponsor's solicitation), and financial award management (how to allocate and document expenses in accordance with sponsor stipulations, institutional policy, and federal regulations).

Work environment

The work environment that the SPA team operates in includes the organizational environment, the physical environment, and the working conditions.

Organizational environment. The organization environment consists of the set of forces surrounding and within an organization. The organizational environment of the SPA team could be described in a level of detail that far exceeds the scope of this study; therefore, these findings relate those that the SPA team named, referred to, or implied during the interview process, including policies and purpose.

Policies. While the SPA team operates in and is bound by several institutional policies, or as Cynthia described, "a set of guidelines that we're following and policies that we're working under." However, participants are much more aware of institutional policies that they are responsible for enforcing. These policies relate to topics such as the distribution of leftover grant money at the conclusion of a fixed price award; the application of Facilities & Administrative (F&A) rates to proposals and awards; or the timing and enforcement of internal proposal deadlines. As will be explored later in Part 2, Nora shared strong feelings about inconsistent policy application when asked what she felt hindered her feelings of competence. Nora described the cognitive dissonance of feeling secure in enforcing a policy, but then having her determination on the policy be overruled:

> If you're like, this is right. I can feel *in my bones* that this is right, this makes sense, so – it would be like, related to F&A [facilities & administrative costs]. Which has always been a soapbox of mine. We have – such inconsistent policies. Actually, we don't even have a policy on F&A, which is on my goals next year to write.

Purpose. Participants noted that one of the main purposes of the SPA team is to protect the institution from reputational or financial risk. Celeste explained how institution risk escalates as the university's research volume increases:

> There's a lot of compliance and financial oversight that I feel like I'm responsible for. Minimizing the financial risk of the institution is huge – *huge* – because [of] our research volume – it's always been huge. But when you think about our research volume, it's doubled in my twenty years at the university [and] volume increases risk. Over time, there's so many more pieces of research administration, grant management, [the] compliance landscape that's always requiring more oversight, more resources.

Failing to comply with federal guidance regarding sponsored programs compliance can endanger an institution's reputation if such failings become public. Similarly, an institution can jeopardize its future external funding if award management is not handled appropriately.

Physical environment. The physical environment in which the SPA team operates is a combination of in person work, remote work, and hybrid work. During the course of data collection for this study, two of the six SPA team members are fully remote and four SPA team members are hybrid.

In person. Before the COVID-19 pandemic in 2020, the SPA team worked fully in person. Not long before I joined the SPA team (but during several participants' tenure on the team), the team moved from a main administrative building in the heart of the campus to a newly constructed building. The new building, while owned by the university and therefore technically on campus, is .7 miles and a 15-minute walk from the nearest on-campus building. Because of the new building's placement, participants used the phrase "in person" to describe their office building rather than "on campus". In fact, two participants described the team's building as "off campus."

Remote. At the onset of the COVID-19 pandemic in early 2020, the Sponsored Programs Administration team (and the University of Denver as a whole) went to a fully remote work setting, referring to work at a location other than the team's office building. The SPA team stayed fully remote until July 2021. One experienced SPA team member was in the final months of a one-year trial period of remote work when the COVID-19 pandemic began. The trial period was effectively extended indefinitely when the entire SPA team also went to remote work.

Hybrid. In July 2021, the SPA team began a new hybrid model, with a schedule that included both in person and remote days for the team members. The SPA team utilized a ramp-up period that started as one in-person day per week (and four remote days) and eventually increased to three in-person days per week (and two remote days). The University of Denver refers to a combination of in person and remote days as a "hybrid" schedule. By the time the hybrid schedule was introduced for the SPA team, a second team member had transitioned to fully remote work.

Working conditions. The working conditions that participants described included the variety of work, a heavy workload, changing responsibilities, the necessity to learn on the job, and the breadth and depth of knowledge required.

Varied work. The work that a research administrator on the SPA team completes is quite variable, or as Cynthia described, "multi-faceted and complex." There is a combination of cyclical tasks (those done on a regular basis) and complex situations (those that don't have a straight answer that require more problem solving and critical thinking). Eliza described these cyclical tasks as "rote" or "routine". They may be done on a daily basis (answering email), a weekly basis (processing invoices for approval to be paid off of a grant fund), a monthly basis (preparing monthly invoices so that the grant fund is appropriately paid); a quarterly basis (submitting quarterly financial reports to sponsors); or at infrequent and unpredictable intervals (reviewing and submitting proposals). Conversely, complex situations are those that necessitate problem solving and critical thinking. They often involve issues or concerns that need to be untangled to mitigate risk to the university or to maintain positive relationships with the many stakeholders with whom research administrators interact (including PIs, department administrators, sponsors, collaborators, and subrecipients). Celeste expounded on the complexity of a typical day:

> In my current environment – I'm half-staffed, I'm trying to recruit new people, I'm trying to manage consultants that have stepped in to help us. While I have my calendar that I look at and I know what's going on, I feel like it's constantly changing, my priorities are constantly changing. I'm getting asked a lot of questions because I've got new team members, consultants that are unfamiliar with the processes, but – there's just *a lot* going on in research administration in the services that a central office provides. So a lot of questions, a lot of needs, a lot of requests from various constituents. No two days are ever the same.

Heavy workload. Participants reported a heavy workload and a high volume of work. Nora noted with an understating tone, "Day to day, I would say that the workload is heavy – especially during certain times of year when we have lots of submissions," referring to submitting grant proposals. Participants noted in several instances that they did not have the “capacity” to keep up with the workload as assigned. Sometimes, to combat the feeling of “being behind” they worked longer hours than the expected 37.5-hour week for staff members at the University of Denver. Cynthia recalled, “I worked so many unpaid hours in this job. I worked until 10, 11pm, so many times in the last six months, like I can't even count them.”

During data collection, the department was in the middle of an internal audit. I gathered that the results of the internal audit were released about halfway through my interview process. Half of the participants referenced the internal audit finding that the SPA team was notably understaffed: institutions of similar size and research volume had teams of ten to twelve people, while the SPA team only had six. At one point in the study, after I and one other teammate accepted new jobs, the SPA team was down to four team members.

Changing responsibilities. The responsibilities expected of a research administrator change over time for two reasons: increasing seniority and a changing regulatory environment. When a research administrator first starts in the profession, they have a lot to learn (as will be discussed in the next section). As they learn more about their craft, their institution, and their stakeholders (like PIs and department administrators, as well as common sponsors), their knowledge and efficiency increase. The increase of knowledge and efficiency allows them (or requires them) to take on more advanced responsibilities. In addition to the normal pre- and post-award duties, more experienced research administrators find themselves shouldered with responsibilities like training others, improving processes, or tackling large and persistent problems that plague the department's efficiency and effectiveness. Nora, recently promoted to a higher-level position, reflected on the changing responsibilities that result from more seniority in the role, but also the heavy workload that prevented her from clarifying the exact duties of a new role:

> [My manager] and I have not had a chance to talk about what those responsibilities are and how much they've changed, so I think that the nature of my work might slightly change but I don't know exactly what that will look like until we're fully staffed.

Compounding this normal evolution of duties is a quickly evolving regulatory funding landscape. The compliance landscape in which grant funding operates is quickly changing with the disrupting influences of specialization, technological advancements, and globalization of research. Celeste explained that while some tasks remain the same, others are constantly changing:

> I think our roles have remained pretty constant as far as supporting the faculty and staff that are applying for and receiving external funding. The other piece [of] that [is] the mastery of changing environments. You just have to be up to date on all of the regulations and policies and hot topics in your field that are constantly evolving and changing. And you can say, I'm a master at it all, but I'm almost thinking in this particular field, you might be a subject area expert, but to master it all is almost impossible. Just because of the environment, you just have to be continually getting up-to-date guidance [and] information… Every time you turn around there's something new that is coming to the forefront [and], "Oh my gosh, we need to take a look at this.' So I would just say, educating yourself and being

up to date on all of the hot topics and new guidance and policies in our field will make us more effective research administrators, right?

Learning on the job. Learning on the job is a critical skill for research administrators on the SPA team. Educational programs that teach a person how to be a research administrator are relatively rare; at the time of writing, there are seven master's degrees or graduate certificate programs in the country that prepare research administrators for a career. Therefore, people hired into this position often have no baseline knowledge of research administration and must learn on the job. In the SPA team, on-the-job training took the form of sitting next to someone who is doing a task, watching them complete the task while they walk you through the steps, and then returning to your own desk to try to replicate the process on your own. Several participants described the process of sitting with a former colleague as she trained them. Cynthia recalled, "When I started, I would sit with one of the other research administrators and just watch what they're doing, go back to my computer and replicate it."

In fact, there was a certain amount of pride of the scrappiness that a research administrator could exhibit by taking learning into their own hands after their initial instruction. Nora doggedly noted, "If I'm shown something once and I can't replicate it, I will sit there and figure it out what I did wrong without asking the question because it was already shown to me." She continued, remembering, "I'm trying to think of when I got trained. I was just handed a bunch of work and I asked questions." Nora recalled her teammate's reaction to the first proposal that she ever reviewed:

> I'll never forget this. I had my first NIH [National Institutes of Health] proposal. I did my review and then it went to [my teammate]. And she just tore it up. And I was like, 'Oh my god. Ok, I have so much to learn.'

Breadth and depth of knowledge required. The job requires a substantial breadth of knowledge to be successful. Nora noted that the SPA team is responsible for what the field refers to as "cradle to grave research administration." The SPA team handles research administration duties from the beginning of the proposal process in the pre-award stage (the "cradle") all the way through to closeout, the final step in the post-award stage (the "grave"). Eliza notes that institutions often elect to use a different research administration model because the "cradle to grave" role necessitates a huge breadth of knowledge. She explained, "We do the whole spectrum of pre- and post-award. I think in larger institutions, they split that out because it's kind of a lot of work that's pretty different." A research administrator in a combined pre- and post-award role needs have workable knowledge of research development; proposal development, review and submission; research compliance; account management; grant accounting; and financial management and reporting, to just name a few. Furthermore, sheer breadth isn't enough; a research administration relies on their depth of knowledge as well. Some day-to-day tasks require research administrators to attend to details so precise that Nora described them as "micro details," "intricate details," or "minute details." Small details like this can be the difference between a proposal getting funded or denied, for example, so a research administrator must be attuned to them. Conversely, a research administrator must maintain awareness of the "high-level" view, or the broader picture of a single award or of the institution's grant portfolio.

Part 2: Perceptions of Choice, Connection and Mastery

The *a priori* themes guiding this program evaluation are derived from the theoretical framework of self-determination. These findings detail how these concepts are understood and realized in the context of DU's Sponsored Programs Administration team.

			Eliza	Nora	Cynthia	Celeste
Experiencing a sense of choice and acting with your own volition	Supports for feelings of autonomy	I feel trust from my manager	X	X	X	
		I take control of a task and see it through as I see fit without supervision		X	X	X
	Hindrances to feelings of autonomy	Senior leadership doesn't take my thoughts into account on decision-making opportunities	X	X		X
		I don't feel listened to by senior leadership	X	X	X	X
Experiencing the feeling of belonging and building a sense of community	Supports for feelings of relatedness	I feel more connected to colleagues who have a longer tenure at my institution	X			X
		I have a supportive manager	X	X	X	
	Hindrances to feelings of relatedness	Our team is understaffed and I am overworked	X	X	X	X
Experiencing feelings of mastery and effectiveness	Supports for feelings of competence	I prevented a problem that has caused me difficulty in the past	X	X	X	
		I am recognized for my work	X		X	X
	Hindrances to feelings of competence	I make a decision, but senior leadership says no to it without telling me why	X	X		X
		I do not have time to pursue professional development or process improvement because I have so much to do	X		X	X
		I am not prepared to train others adequately	X	X	X	

Graph of Part 2 Findings

Experiencing a sense of choice and acting with your own volition

Perceptions of autonomy on the SPA team were very high. Eliza's feelings of autonomy stemmed from her ability to manage her workload on her own without someone constantly checking in on her progress:

> I have a lot of autonomy in that I don't have someone watching what I do all the time, there's a lot of trust between my supervisor and myself, to confirm – or like that, I don't need – nobody needs to be looking after me to be sure I'm doing my job, to be sure I'm keeping up with all of my tasks and my duties. So that feels like I have the autonomy to manage my time in a way that allows me to finish all the things I need to do.

Similarly, Nora feels a lot of autonomy because she isn't micromanaged:

> When you're being micromanaged, you don't have a lot of autonomy. You are constantly being bombarded with – like, answering or explaining how things are done or why you did them or – you know, justifying what's happening. Whereas I don't think that is really what I've experienced in the feeling of [autonomy]. It always feels like we're coming up with the questions and kind of driving that conversation on what's going on in our day-to-do [with] grant responsibilities or day-to-day work.

Celeste shared the importance of being able to take her own approach in how she manages her team:

> What supports my feelings of autonomy is that I'm able to manage my team the way that I feel is best and what works for everyone and where I feel like there's a sense of trust and respect and happiness amongst my team members.

When asked how much autonomy she experienced on the job, Cynthia explained that while the field of research administration has the guardrails of federal guidelines and institutional policy, she still exercised a lot of control of her job tasks:

> I would say [I feel] fairly autonomous on a day-to-day basis. [We're] working within a standardized practice, I guess, within a set of guidelines that we're following and policies that we're working under. But a lot of everything was pretty open to what my professional opinion was and how to best proceed, so I had a lot of freedom to do things.

Participants described the ability to manage their own schedule when working remotely, but there wasn't consensus on whether that flexibility increased feelings of autonomy. Eliza, on one hand, viewed the freedom to work remotely as a support of her feelings of autonomy:

> I think being able to work remotely in and of itself is trusting your employees to do their job. I find that if I [am] forced to go into the office for a job that does not require office time, I feel like somebody needed to see me, just – just to see. Just to see my face, to see that I'm there, type typing away, even though I do that at home.

Eliza enjoyed the flexibility to manage her schedules to balance work and personal commitments, especially when working remotely:

> I have the autonomy to manage my time in a way that allows me to finish all the things I need to do… I'm able to eat lunch when I need to, I'm able to run to an appointment, and sort of shift that time and still be completing my work responsibilities.

However, Nora described this same flexibility in when the work gets done not as an increase in autonomy, but merely as a change to the "dynamic of when the work gets done." When asked if having the option to work remotely affected her feelings of autonomy, Nora nonchalantly described a high level of flexibility in her work, but she didn't think that affected her feelings of autonomy:

> I really feel like [working remotely] would be about the same [level of autonomy as working in the office]. Only because I think that it's more of a social sharing that increases when you're working in person as opposed to working remotely. I've always felt it is about the same level of autonomy. I don't think I ever felt [my feelings of autonomy] changed because I worked remotely. You might change your work hours, right? Like I just put a new thing on my email address that says, 'My work hours may not be your work hours, don't feel like you need to respond to this email outside of your working hours.' But I don't know that necessarily that that made me feel more autonomy or less. By having more varied work hours to do more tasks, I [might have] more time in the evening to get something done, as opposed to something else. I think it just changed the dynamic of when the work gets done, not necessarily my feelings toward it.

Supports for feelings of autonomy. Because feelings of autonomy were so high, there were several different examples of what supported feelings of autonomy. The two most common were the trust that participants felt from their manager and the freedom to approach a task without supervision.

I feel trust from my manager. Invariably, participants asserted that strong management supported their feelings of autonomy. Eliza confided, "There's a lot of trust between my supervisor and myself. Nobody needs to be looking after me to be sure I'm doing my job, to be sure I'm keeping up with all of my tasks and my duties." She affirmed these sentiments later in her interview:

> It supports my feelings of autonomy that my supervisor trusts me to do my job successfully. She does not micromanage me, she does not make me feel like my work product – I mean, she supports the level of work product that I'm providing for her. And is available to me for higher level questions. I can do most of the things – that I can do autonomously by myself, I don't need anyone else's help, and my supervisor is available when I need that next layer of assistance. So I would that her trusting me to do my job appropriately without managing me – every single day, every minute – supports my feelings of autonomy.

Participants felt that their manager allowed them the space to approach their workload and responsibilities but remained accessible if they needed input or feedback. Nora asserted a similar sentiment:

> I think management leads to autonomy. It is your manager trusting you to do something well, and then giving you the autonomy to do it…I think that in my mind, autonomy has always come from a manager level standpoint, in my experience. I've had managers that are micromanagers that I just cannot stand at previous jobs, whereas here, I feel like you're trusted to do a good job – because management gives you that freedom.

Trust from their manager was critical to supporting participants' feelings of autonomy.

I take control of a task and see it through as I see fit without supervision. Several participants recounted the experience of being given responsibility for a task, noticing that there was room to improve upon it, taking steps to evaluate various alternatives, and then implementing a process improvement. Realizing that they had the volition to make a process easier, faster, or more accurate and acting on that ability was empowering and reinforced participants' feelings of autonomy. Cynthia recounted the process of improving outgoing subawards and subrecipient monitoring:

> When I started with subawards, it was a mess. It was a total mess and we weren't doing subrecipient monitoring properly, which is totally understandable because I ended up being the person who took over that role, so as I learned, as the time – years went on, "Oh, I understand why this wasn't being done," because there's so much other responsibility. I noticed these gaps, so I created new forms and I created new processes and procedures and, how we work with [another central university unit], how we create POs [purchase orders], so many things because I saw those loopholes, or I saw those gaps that needed to be filled.

Nora, meticulously tuned in to what could be better in the team's processes and procedures, recounted numerous examples of where she had seen inefficiencies and felt empowered to improve upon them:

> I think we have a lot of autonomy or at least in my experience, I've felt that I've had a lot of autonomy because I've been looped into things where, let's say I would have to – I would say, 'Let's revamp the PRA [Proposal Review and Approval, a part of pre-award approvals] form and make an entirely new form,' like – what can we ask? What does it need to look like? Or, the gift card process. Originally [another central university unit] took the lead on that and then we figured out that there were some problems with it, so I had the autonomy, or was

> at least empowered to be able to make those types of changes. I feel like we have a lot of autonomy in my experience.

Once again, this tied back to Nora's belief in her manager's support and confidence in her expertise and knowledge. When participants felt empowered to identify problems and fix them, they experienced stronger feelings of autonomy.

On a broader scale, Celeste took control of how she manages her team with little input from senior leadership. When asked how she exercises the most autonomy, she shared that she supported her team with her own approach:

> As far as managing a team, I feel like there is a high level of autonomy. My management style is something that I can act on my own volition, right? And how I've built my teams, and support my teams and mentor my teams, all was on my own. There's no one telling me how I should do things. That's probably the biggest sense of choice that I think I have in my job.

Hindrances to feelings of autonomy. While participants noted strong feelings of autonomy, they also shared experiences that made them feel less autonomous: feeling like senior leadership does not take their thoughts into account on decision-making opportunities and not feeling listened to by senior leadership.

Senior leadership doesn't take my thoughts into account on decision-making opportunities. Participants pointedly remembered the times that they would make a decision only to have senior leadership reverse or undo the decision. A particular pain point was policies that are inconsistently applied across the university. One controversial decision often revolved around the application the facilities and administrative costs (F&A) rate, which dictates the amount of facilities and administrative costs (also known as indirect costs or overhead) that are included in a proposal budget. A research administrator, guided by the established F&A rates, would determine that a certain F&A rate was appropriate, only to have senior leadership reverse their decision and approve a lower rate. Eliza explained that while she enjoys the ability to make certain decisions with autonomy, she's very clear of the line that she cannot cross:

> There's a point at which I cannot make decisions – and that feels, right now, especially difficult, with the current situations that are going on [being understaffed]. I have thoughts, I have ideas, I'm working on these problems, and I'm not the one who's able to make a decision on it, so I think that – something that would hinder my feeling of autonomy is not having good collaboration or good communication from leadership in compromising, like hearing what we're doing, hearing what other people are doing, talking about it together, and then coming to a solution together. I think that that doesn't happen as often as it should. And I don't really know why, I mean – I could take some guesses, but … That makes me feel like I can't do my work to its best quality… It hinders my ability to be autonomous in my work.

If participants act on a decision that ends up being reversed, they questioned the next decision-making opportunity that came up. Participants believe that it is their job to apply policies consistently, so when senior leadership makes exceptions to established policies like the F&A rates, as Nora explained, her feelings of autonomy suffered:

> I think what I've honed in on, especially, um – recently – is that when you have policies that are not consistently applied across the university, the autonomy to make a consistent rule across all of your departments kind of falters. Right?

> Because then you're doing exceptions. So exceptions always create this sense [that] you can't [exercise] autonomy because now you're requesting an exception upwards, so you're having to communicate upwards, because it's not following the right policy, right? And it's not clearly laid out, so that feeling of autonomy gets lessened because you don't have the support structure in place to be applied consistently and then you're looking at exceptions. So I think that's where it kind of hinders that autonomy feeling.

Celeste confided that she wants to have more input in decisions and believes that she has the experience that enable her to make sound decisions. However, she isn't given the authority to act on her decision-making; Celeste had to get approval from senior leadership on more decisions that she thinks is necessary:

> With my years of experience and my background, there's a lot of areas that – I mean – where I would feel that autonomy is hindered is – I've been doing this a very long time, but I'm still not able to make a lot of decisions that I wish I could be more involved in or have the ability to do. Such as, I think there's certain areas of contract negotiation that I could definitely be involved in. Policy development. Making decisions based on the real experiences of our team and where we feel we should go. And I don't feel like I get that support from [senior leadership].

I don't feel listened to by senior leadership. Participants complained of a disconnect between themselves and senior leadership. By their logic, there wouldn't be so many decisions reversed by senior leadership if they only had more empathy and understanding of what the SPA team deals with and experiences. Eliza described the contrast between the connection she feels with her manager and the disconnect with senior leadership:

> Decisions get made without the input of the people who are actually working through it. I don't know where this is going but – my direct supervisor is very supportive and does not micromanage me or whatever, but I think the further up the line you go, the more difficult it is to really connect [senior leadership's] decision making to what actually happens to make that decision function. Or enact that decision. It feels like there's a big gap between those two things.

Delicately, Nora also drew a distinction between the support and freedom that she feels from her manager and implied a lack of similar support and connection from senior leadership, confiding, "I feel like you're trusted to do a good job because management gives you that freedom. And specifically, just the – just [my manager]. Just that, just the [manager] level."

Eliza used the analogy of "making the wheels turn" to describe how the SPA team is where the real, practical work gets done, as opposed to the strategic, high-level work that senior leadership does. She felt that senior leadership didn't have enough awareness of what "the wheels" experience:

> There's a little bit of abstract thought between what [senior] leadership is saying we want to do and how it's being executed like, I would call it on the ground, where we're making the wheels turn. [Senior leadership is] deciding what the wheels do but we're making the wheels turn… I don't know what that would be called. Maybe just the same gap we're experiencing between how things work and what people want.

Cynthia also felt that senior leadership doesn't take the SPA team's experiences into account:

> There's so much space for us and freedom in our position, [but] when there is oversight, it often comes without [senior leadership's] understanding of the actual issues or the nuance of the situation… We think through what we know as a team would work really well for us, but – at an [senior administration] level, they – they [do] not have the capacity to – they're not in our position seeing the day-to-day struggles we're having and *why* these things would be really beneficial to implement. So I think it was when that occurred. Just like, oversight without – full understanding.

Celeste expressed a desire to be more involved with "making decisions based on the real experiences of our team and where we feel we should go," but confessed that she doesn't "get that support" from senior leadership. Celeste tried to communicate that she wanted to take on more responsibility with policy development and decision-making but didn't know if senior leadership was listening to her aspirations. She confided, "I feel like there's kind of a roadblock sometimes. I don't always know that my input, my feedback, my concerns, go any further than my boss." Later in the interview, Celeste expounded on this sentiment, sharing that senior leadership not listening to her desire for more responsibility made her feel less satisfied in her job:

> With job satisfaction, I think the other thing is my own growth and development – I would like to take on additional responsibilities, I would like to grow within my own unit. But there is – I ask, and I ask, and – I don't get to take on additional responsibilities. It might be little things, but they're not – they're not significant,

> right? And we have more, we have more work. But there's a difference between workload and responsibilities, right? And your job description. And that's important to me. So it's been a little – I mean, yeah, it's been affecting my job satisfaction, because I do want to grow, I do want to take on additional job responsibilities. But, I also like the field that I'm in and I like what I'm doing, so – I've stayed because I've hoped – my hope was that there would be room for me to grow within my own organization.

Participants shared that they had been trying to communicate the severity of the team being understaffed, wanting senior leadership to take their concerns seriously. Cynthia felt that senior leadership should have known how overworked the SPA team and started to say no to requests for more information, services, and support from other units on campus:

> I sent very strongly worded emails [about the team being understaffed], I took every survey – but ultimately that support from [senior leadership] – to the [other units] who are overworking us, that this is a no, [senior leadership] kept telling them yes. The answer was always yes.

Cynthia repeated this feeling of senior leadership not listening to her concerns and needs when she confessed later in the interview, "Sometimes [you] just felt very brushed off or – like your opinion, maybe. I would just say sometimes you feel like a little, pushed to the side, your ideas and your struggles and needs."

Shortly before the study period began, ORSP undertook a "listening tour," a series of several short meetings with various members of the DU research community (primarily researchers and department administrators). The listening tour questions left space for both positive and negative feedback. Celeste asserted that the SPA team received plenty of positive feedback but acknowledged that the negative feedback highlighted some growth areas that she had also noticed. For instance, one negative comment was that the SPA team wasn't responding to emails or setting up subawards quickly enough. Celeste felt that the SPA team was doing the best they could with the staffing and resources they had. However, she felt that senior leadership didn't listen to her concerns about understaffing, which directly affected the team's ability to respond to emails and set up subawards quickly enough. Celeste dejectedly wondered aloud what it would take for senior leadership to listen to her:

> I go back to wanting to learn more about what seems to be the biggest concern out of these listening tours – did I miss something? And is it just not being responsive enough [to principal investigators]? That seems to me – a definite resource issue. But have I not had – a strong enough voice on this? Because, I've had a voice. My voice hasn't been heard. And what does it take? It takes negative feedback? To hear my voice? I don't want that. That's not how I want – that's not how it should be.

When reflecting on the expectations of the level of service that the SPA team provides for the research community, Celeste recalled that she had been voicing the need for more staffing support to senior leadership for years:

> I would venture to say at least the last ten years – that's been my voice. And these [services] are the things that I think we should be doing or we could be doing, but we don't have the resources, yeah, we don't have the resources – it's just one of those things that, we just can't address now. But that just keeps going on and on

> and on. And now – oh my gosh! I think that's probably the most – disappointing piece of [what] I'm feeling. I mean, my feelings right now are of disappointment because I'm like – I mean, I've been telling you this for years. And wha – what did I not – how did I not get through? Was it me? I think that's one of the areas of job satisfaction that's weighing heavily on me now, is – those [understaffing concerns] weren't addressed, but now [senior leadership] is like, "Oh my gosh, why aren't you doing these things more efficiently? More timely?" Well, we don't have the resources! We've had to prioritize our work. And, have we prioritized it wrong? We've been getting proposals out the door and getting awards accepted and negotiated and getting reimbursed, and – you know, those are our priorities. Maybe I was wrong. But tell me where I was wrong, right? What could we have done better with the resources that we had?

Celeste gave another example of how she didn't feel listened to later in her interview. She explained how she wants to advance in the organization, and that senior leadership led her to believe there would be a career path for employees in her position, but the career path never materialized. When Celeste tried to express her desire for advancement and growth, she felt like senior leadership didn't listen:

> I was kind of told there would be [a career path], right? 'Yeah, there'll be a [career] path, we just haven't, you know – figured out what that would be.' But – there isn't a path, right? I mean, yeah. That does affect your job satisfaction. And, that you're getting the support that you feel you need for your team from [senior leadership]. I feel that that's been – the level has really dropped within the last couple of years. That level of support. And I think we're all feeling it. Right? You

> need that level of support in order to address concerns, growing pains, strategic initiatives. And when you have the ideas and thoughts, you want to – they need to be – you want to feel like they've been heard. And I don't think that's happening right now. I don't feel like that's happening. Or if it is being heard, 'Well, there's nothing we can do about it.'

Experiencing the feeling of belonging and building a sense of community

Perceptions of relatedness on the SPA team were high, especially amongst team members. Eliza noted how connected she feels to two team members who have been on the SPA team the whole time she has:

> I have [two teammates] who I've been with the entire time. And so I feel really connected to those two. And obviously new people, I'm getting to know better but, I know the way [my teammates] work, they know the way I work, I know what questions to ask them, they ask me questions. We just kind of have a good rapport because of the time we've been together.

Nora observed how with the change to remote work at the onset of the pandemic, the use of collaboration tools like the instant messenger Slack had a positive impact on her feelings of relatedness:

> The team has really grown in its collaboration or maybe that sense of belonging. With the introduction of Slack, there's a lot more communication that goes back and forth between all of the team members than maybe previously happened. So I think that it increased this relatedness in the way that we worked because we introduced a new tool that [allowed us to be] relating to each other. And keeping more in touch.

Cynthia shared a sense of relatedness stemming from opportunities to get involved in the institution more broadly:

> I felt related to, and I felt that sense of belonging and community… From my experience, which I don't have that many years of experience working in higher education, but – it just feels like there are a lot of opportunities to go out into the community, especially at [the institution] and to have those opportunities, and I definitely participated in many of them. I thought that was good.

Celeste tied her feelings of relatedness directly to the SPA team:

> I feel like there is a strong sense of community and a team environment in ORSP, and even within a stronger sense, within the SPA team…I do feel a sense of belonging, especially within my own team because I feel like they are the reason that I come to work, right? Like, I really love the team that I work with… The sense of belonging and community I feel is very strong. I feel like I have been fortunate to have a team that, we work so closely together and I feel like we all learn from each other and share our knowledge and we take the time to make sure that we listen to each other, and we communicate well with each other… But again, I think it's that team environment that really supports feeling of belonging, like, this is – this is where I should be, right?

Participants suggested that their level of relatedness may be related to their personality. When asked about her feelings of relatedness, Nora laughingly shared:

> I'm kind of a lone wolf, just in my personality. I am an introvert. Where maybe being in a group of people fills someone's cup, it takes mine absolutely down.

> That sense of belonging, I don't thrive on it, right? It's not something that I need to feel like I'm doing a good job.

Cynthia also mentioned her introverted personality and commented, "I'm pretty introverted and keep to myself, and work very well just by myself. With that in mind, I felt related to." Notably, while half of the group mentioned their introversion that may skew them down on the need for relatedness, the remaining half of the group (who didn't elect to identify on the introversion/extroversion scale) also declared overall high perceptions of relatedness.

There was a marked lack of consensus on whether remote or hybrid work led to increased or decreased feelings of relatedness. Remote work, hybrid work, and in person work clearly each have pros and cons for research administrators on the SPA team. Eliza noted that working remotely with colleagues made her feel more connected, but being the remote colleague with hybrid teammates in the office made her feel somewhat alienated from the group:

> I think that the hybrid setting is more difficult to feel connected to your team because you are split. Even if you're all meeting at the same time, even if you're doing stuff together – you know, you're split into the people who are there and the people who are not. And even with the most thoughtful technology, you're still not there. And that makes – even though you think it'd not make a difference, but it does.

Eliza recognized the pros and cons of remote work and in person work, but hybrid work was the most detrimental to her feelings of relatedness:

> I think working remotely, interestingly, has made me feel more connected to the people I'm working with. I mean, in a different way, certainly. I'm not seeing them every day or having coffee with them or whatever. But – I feel like we behave more like a team when we're all doing the same thing. I don't know if this is a weird tangent but – when three people would be in the office and two people would be at home – remote – that clearly put us into two camps. And I think that we're in the process of worming our way to fully remote, and I think that that will ultimately be something that brings us together.

Cynthia reluctantly conceded that remote work made her feel "probably a little less" related because the team is not "person to person." On the other hand, she countered that the transition to fully remote work happened at the onset of the COVID-19 pandemic, when "we were also not able to see anyone else in person, so it was really isolating in general." Cynthia recounted how at the beginning of the pandemic, the team would play games over Zoom on Friday mornings to stay connected, but that after a few months, they stopped as the workload got too heavy to sustain the practice:

> We would play games on Fridays, or we would try to do things to build up our spirits and to keep that relatedness. But that's really dependent on the people on your team and in your office, those initiatives that are being taken by – just, the staff. I would say definitely, at times, [relatedness suffered], especially when those things fizzled out, when we were like, over the games or we were like 'whatever, it's just another busy Friday.'

While participants couldn't say with certainty if remote, hybrid, or in person work was better, there was a resounding declaration that being "off campus" was worse. The term “off campus” is amusingly objectionable; the building in which the SPA team is housed is technically on campus because the University of Denver bought and now owns the land and property. However, the building is nearly a mile off the main campus, requiring at least a fifteen-minute walk from the SPA team’s building to reach anyone on campus. Nora, equivocating on the merits of in person versus remote work, suddenly landed squarely on her conviction that relatedness deteriorated with the “off campus” move, declaring: “I will say – the relatedness suffered a ton when we moved into [the off-campus building].” She went on to describe why:

> Think about it. Now you don’t feel like you’re a part of the [institution’s] community. In my mind. Like, you just lost that feeling of feeling like you were in the thick of it. And – it's hard to say that, because I just remember being in [the on-campus building]. And there, you felt like you were the center of the universe. The chancellor’s office was there, you know… You literally would see the people that are running the university just walking down the halls, you know? I feel like that was really built better, when you were in the center of everything, as opposed to being so far out in [the off-campus building]. I think you really kind of lost that experience of having that relatedness to everything that was going on in the university.

Celeste also lamented the days of being in the on-campus building. After noting that seeing people in person is probably better for her feelings of relatedness, she regretfully remarked, “Not that we get a lot of [seeing people in person] when we’re in [the off-campus building], necessarily.” Celeste went on to wistfully reminisce about the “on-campus” days:

> I was taking a new employee around campus the other day, and I was like, gosh. I miss being on campus again! And I'm in [the off-campus building], but I still miss being on campus. I totally think if we had space on campus, I think that would make everyone feel different[ly]. But it's hard. I'm not a telecommuter, and I'm not fully remote. But I was for a long time [for 18 months during the beginning of the pandemic] and while I think we did an excellent job of providing our same level of service, you do miss the sense of community [on campus]. And maybe even a sense that I do work for an institution of higher education and just being around the vibrancy of campus. I get it. I get it.

Supports for feelings of relatedness. SPA team members suggested that their strongest feelings of relatedness stemmed from the tenure of their colleagues and from a supportive manager.

I feel more connected to colleagues who have a longer tenure at my institution. Participants shared that colleagues who had been around for a long time (as long or longer than they themselves had been at the institution) were the relationships that most supported their feelings of relatedness. The rapport and understanding that SPA team members built over time with these colleagues is incalculable; participants noted that work together is not only more efficient, but more enjoyable. When asked what supported her feelings of relatedness, Eliza described the positive feelings of working with colleagues who had been there for her whole tenure:

> I'm trying to think – things that support my feelings of relatedness. I have been in this job for four and a half years, going on five – and – having the same coworkers? It's sad, but many of my coworkers have left me recently, but – I have

> one [teammate] and my manager who I've been with the entire time. And so I feel really connected to those two. And obviously new people, I'm getting to know better. But [with my teammate and my manager], I know the way they work, they know the way I work, I know what questions to ask them, they ask me questions, we just have a good rapport because of the time we've been together. So I would say tenure of your colleagues plays a big role in how connected you feel to your job… You know what? The biggest thing that keeps coming up is how long people have been in the job, retaining good people. That's what makes me feel closest to my group. Because I'm thinking like – I work with [my teammate] and I've been working with her for five – four – four and a half years. I've work with, you know, all these people who have been around for a while, and that feels like – I value working with the people over – other – values points, you know? So yeah, so that's what I would say.

Longtime work relationships can weather the storms of a tempestuous day at work; participants know that they can rely on longtime colleagues because they have turned to them in a time of need before. Consequently, Eliza felt more "willing to do things" for these colleagues with whom she has forged that bond of trust, whether they were colleagues across the institution or even senior leadership:

> I feel – more willing to do things, more – more like, I don't know – I don't know what the word is, but – yeah, definitely [it] is not just in my [team], it ripples outside of that [across the institution]. Like, [a senior leader] even – [the senior leader] has been there for the whole time that I've been here, and I really like [the senior leader] so I'm like, "Oh, ok, we have good leadership, it hasn't switched

> over three or four times.' It just implies that whatever's happening is favorable enough for people to stick around. Whether it's for benefits or they support the work that they're doing or whatever it is – it's favorable. And that makes me feel like we're in it together to do something good, rather than we're just cycling people on and on for a billion years.

Celeste also noted a sense of upheaval with employees leaving the university, but observed how the longstanding relationships contribute to her feeling of belonging:

> I've been a long-time employee of the university. I feel like I know a lot of people, although I know there's a lot of turnover and change so there's a lot of new people. But I also have that longstanding relationship with some of the people that are still there. I do feel a sense of belonging, especially with my own team of because I feel like they are the reason that I come to work every day, right? Like, I really love the team that I work with. [Our] team is changing, right? And I'm going to have new team members, and I've been sad to lose other team members, but I also realize that that's part of growth and development among the people that you work with over the years.

I have a supportive manager. Without exception, participants noted that a good manager supported their feelings of relatedness. In the participants' eyes, a good manager was one who supported them, which in turn made them feel connected to the team. The manager was somebody they could trust not only to listen to them, but to advocate for them. After explaining how important the tenure of her colleagues was to her feelings of relatedness, Eliza listed a supportive manager as her other top reason for experiencing a sense of relatedness in her work:

> I think also – not just how long you've been there but your supervisor. I think working for a bad supervisor is one of the reasons why people leave jobs across any field. And I feel like I have a good supervisor who supports me, and that makes me feel connected to this group. I feel like if something happens where I need her to back me up, she does. And that makes me feel connected to my colleagues and makes me feel more like this is my group and we stick together.

Nora noted that her manager gives her enough space to operate autonomously, but Nora always knew that she could approach her manager with any questions or larger issues that need to be escalated. Nora framed it as an ability to "communicate upward," or to share her concerns with her manager, which made her feel both more autonomous and more supported:

> I think it's mostly because we usually point stuff out to her, right? Like – rarely is it that something comes back to us because we're doing such independent work, [instead] we're telling [our manager] about problems, right? We're coming to her with them, as opposed to her coming to us and saying, 'How's this going? What's going on here? I need to know about this," like, "This looks like it's not working," or anything like that. So I think that's why it always feels like we're operating in autonomy instead of someone coming back at you and saying, "What's going on, why did you do it like this," all of these things. I feel like we're always communicating upward instead of tons of communication coming downwards.

Later in the interview, Nora described her manager's willingness to understand her experiences and concerns:

> I think that when you have a manager who's willing to get down in the trenches with you, you feel like you have someone who's on your team and willing to just come in and help you with a problem. So it really kind of forges this relationship that you feel like they know what's going on and you guys are sharing the same experience because you're dealing with the same problem together because you're willing to work on it together.

The manager who will "get down in the trenches with you" is a stark contrast to the "gap" participants felt with senior leadership, who participants felt are too removed from SPA team perspective and experiences.

Cynthia described her manager as a force of compassion. Cynthia noted that her manager showed care to her team by being supportive of the team using their vacation and sick time:

> I'm so – I'm sick all the time, like – I'm always sick. And [my manager] is so compassionate and understanding in that way. And never, ever made me feel bad about taking time off when I needed it. And in return I felt so grateful that when I felt better, [I] would work, right?

Hindrances to feelings of relatedness. Participants agreed that their feelings of relatedness were hindered by the SPA team being understaffed.

Our team is understaffed and I am overworked. As noted above, the SPA team experienced a notably high level of turnover during the study's timeframe. The rising workload with increased research expenditures only exacerbated the team's staffing losses. Because they were so short staffed, participants were missing the level of support from senior leadership that made them feel connected to the department and institution.

Eliza recounted that recently, she had trouble sleeping because she was so stressed about her work. She explained that while the team was understaffed after a period of turnover, she wanted senior leadership to offer the SPA team support and encouragement for the work they were successfully doing. Instead, there was too strong of a focus on the metaphorical "fires" or "explosions" that could be prevented with the team's current staffing level but also could not be ignored due to their urgency and risk:

> I think you're catching me in like – I don't want to call it a low moment but like – I couldn't sleep. Couldn't sleep because I was like, "Ok, ok, ok." And [then] I was like, "Wait! I'm off work. I want to go to sleep! This has nothing to do with it." So you're catching me on a day where I'm particularly feeling – I'm trying not to be negative, I'm trying to answer your questions in a like – thoughtful and – whatever way, but yeah. Right now – being understaffed does not make me feel like there is that relatedness or sense of belonging. There are fires and instead of feeling supported – I could not do [all the work] because I did not have time because I'm doing two and a half other people's jobs. I'm – that level of support [from senior leadership] isn't there. So like, whether you have consultants [to help with the workload], whether you have whatever – we still, if something comes up, like, something exploded yesterday, and – [senior leadership] is not pumped about it. Instead of [senior leadership] being like, 'I understand why this could have been missed, how can we move forward?' I think that – that disconnect is what I wanted them to address. [That] would have made me feel like we were more of a team. Instead of just like, 'All right, we'll do our best," and – and we'll get in a

bunch of trouble [for being behind on work], you know? Because we can't do what we need to do.

The severity of the understaffed team was a main motivator for the person who left the team and was negatively coloring the perceptions of those who remained. When asked what hindered her feelings of relatedness, Cynthia stoutly asserted that her main hindrance was not only the heavy workload, but also that others didn't acknowledge the heavy workload. There was too much for her to do and not enough time to do it in, she insisted, and members of the research community – sometimes senior leadership and sometimes those she served more directly, like researchers – weren't aware of the severity of the divergence:

> I think, like as a general theme, just being overworked and stressed out all the time and that not being recognized. Just being in administrative positions oftentimes – you're overworked and not recognized by the people you're working for. So there are, you know, there are times where, you're getting fussed at by, like a PI [principal investigator] for not responding in forty-eight hours or something, and it's just like, "If only you knew, like – I can't." I can't do all of these things. That, there's such a gap there whenever those types of situations unfold. And just feeling like, wow, there is just like, there's such a gap between us, who are in the weeds doing the work, and executive leadership.

Participants had trouble reconciling what they were expected to accomplish with what they could reasonably get done. Cynthia confided that she couldn't keep up with her current workload, sharing "I'm being told I need to do these things and that I should have the space for it." Nora optimistically noted with a laugh, "[I] never have time to do fun closeouts [a task at the end of a grant life cycle], so – I think maybe job satisfaction would be having a full staff, and having the time to focus on the fun problems that you like to do."

I would describe the attitudes of those still on the team as rooted in optimism. They stayed because they viewed the team's understaffing as a temporary period of difficulty that would eventually stabilize and improve. As her interview came to a close, Eliza explained how important work-life balance is to her job satisfaction. Her job normally affords her the work-life balance she desires, but the recent turnover has made her workload heavier. Eliza equivocated on the strain that being understaffed placed upon her, implying that she expected the period of stress to ultimately conclude:

> I would say – recently, because we've been understaffed, I don't have good work-life balance. I'm working long hours, every single day, so are my supervisors, so are my colleagues – and I feel more and more every day like I want to quit. I won't quit because – I know that's not, I'm not seeing that through – I'm not seeing my job through a perspective, like – I'm stressed, so I'm feeling [being understaffed] more heavily. But I would say that – that is my personal [feeling], in my job satisfaction is work-life balance. That's one reason why I stay in this job, that's one reason why I work at [this institution] – for that – ah – value? That we have a thirty-seven and a half-hour work week, we – promote taking your time off and not working on your time off, we want you to – be happy if you need to take a, you know, leave of absence or whatever. [The institution is] supportive of all of that. And right now, I feel less and less like I have that balance and it's really important to me because I do this job so that I can live my life.

The team member who left the team had lost faith that the situation would improve. Cynthia considered why she had been so ready to get a new job. She described how responsibilities kept being added to her workload well past the point of her having the capacity for them. Having such a heavy workload not only made her feel like she was less competent in her work, but also made her feel taken advantage of:

> I'm aware that [the workload] is unreasonable and unfair, that these expectations are on me. But it undoubtedly messes with your competence. Feeling that you are [not] competent in your position because it's almost like – although I know I shouldn't be doing these things because I already have a full plate, I'm being told I need to. And I'm being told I need to do these things and that, I should have the space for it… But I also was just like, ok. I always would remind myself that like, this is too much. I just wish that there was a way for – any employee to actually put your foot down and say, 'No. I'm not doing this.' Or demand pay [for the additional work]. That's the other thing is just like, I worked so many unpaid hours in this job, like – I worked until like ten, eleven pm, so many times in the last six months, I can't even count them. And so it's just – ultimately – it's not about competence any more, it's just about being taken advantage of… Just in general, the team being understaffed and overworked – how can you be satisfied in your job when that's the constant? That's just, the way it is?

Even team members rooted in optimism can't keep putting out fires forever. Participants hinted that their patience was starting to fray. Eliza remarked that she normally feels more satisfaction in her job but doesn't want to carry the workload of two to three people when the team is understaffed, sharing: “When we are short staffed, I feel less satisfied in my job, because – it’s not really my job, it’s my job, plus plus.”

Participants expressed frustration that senior leadership seemed not to recognize – or perhaps even know – the hard work that the SPA team was putting in. Celeste felt senior leadership was putting too much attention on what the team could do better versus what they had been doing well. She confided, “I feel like the work we do – you know, sometimes it’s hard to tell how much it’s appreciated? Because I think there’s more emphasis on the things that don’t go well than on the things that do go well.”

Celeste expounded on the feeling of having senior leadership focus more on the positive than on the negative later in her interview. Celeste recalled the listening tours and confided that she felt that senior leadership focused too heavily on the critical comments without sufficiently recognizing the positive feedback:

> We had the listening tours. I compiled [the feedback] and I sat in on all of the listening tours that my team scheduled. And I thought that they were all – and maybe I’m biased – but I thought [the comments] were all very positive and the things that came up were things that we were all like, ‘Oh yeah, well I’d really like to have [that], we’d like to have training on this, or if we could use this functionality within our eRA [electronic research administration] system.’ Nothing that I disagreed with. But when I heard from senior management that – maybe I haven’t done a good job because of some of the feedback, that senior management pulled that from these listening tours, or – PIs [principal investigators] are like, ‘You’re not responding quick[ly] enough to emails that we send,’ or – [the] subaward process, “Subawards aren’t getting set up and executed

> in a timely manner." It comes back, what I've learned recently, on *me*. And it's – it's a shock, and I'm still trying to comprehend it all…I need to have some additional conversations [with senior leadership]. What is the root of the concerns? Because I'm not seeing that. I'm seeing [that] we've done a really good job. But maybe it's not being seen like that from senior management's eyes, right? And if I felt like we really weren't doing a good job, I would say, 'Gosh, we could do better." And maybe we can do better. Maybe we can do more – with more resources, but I think we've been doing a really good job.

In this period of heightened turnover, participants exhibited a gritty resignation that their jobs would be much more difficult for several months while new team members were hired and trained. However, they expressed disappointment that senior leadership failed to acknowledge how difficult things would be for the time being. Eliza beseeched, "What I'm wanting to hear from them is – I want them to acknowledge that [being understaffed] will be very difficult. There was no acknowledgment that this is a bad situation to be in." Eliza explained that after two teammates left, senior leadership brought in consultants to offload some of the extra workload. While she appreciated the gesture, she wanted more transparency and honesty from senior leadership to accompany it:

> I feel grateful that they provided some level of support [by bringing in consultants]. I also felt like they wanted to pat themselves on the back for doing something for us and didn't address the root cause of people leaving and didn't address the obvious, that it will just be hard, and we're sorry that this is happening. I was hoping for a little of that and we didn't get it.

Similarly, participants were shocked at senior leadership's response to an internal audit finding that the team (when fully staffed) should have ten to twelve people (as opposed to six people). Celeste felt they had still accomplished a lot with such a small team. She insisted, "[We] kept compliance in check and minimized the risk to the university in times when we've been understaffed, under-resourced." Nevertheless, senior leadership pointed to the shortcomings, the inadequacies – the failings. Celeste shook her head in disbelief at senior leadership's response to the internal audit finding that the team was strikingly understaffed:

> [The team being understaffed] should have been the number one thing that senior management would address and it wasn't! Or, not address. To – to respond to! Like, oh my goodness. Not that they're going to be able to give us three new FTE [full-time employees] overnight, but this is a problem.

Participants didn't necessarily expect immediate action from the internal audit finding – they just wanted senior leadership to acknowledge that the audit's finding validated the "feelings of overwhelm" that the team had been experiencing. Celeste agreed, "To acknowledge it! Yeah. Nothing was said."

Experiencing feelings of mastery and effectiveness

Perceptions of competence on the SPA team were overall very high. Eliza asserted that her feelings of competence stemmed from her years of experience on the job, allowing her to answer questions that she knows or to solve problems that she doesn't know:

> Right now I feel very competent. Someone asks me a question, I know the answer, because somebody's asked me that question two years ago or a year ago

> or fifteen times in the past month, you know, I feel like – experience makes me feel competent in this job… I feel competent because I can do all of the things that I need to do, and then if I can't do them, I can figure out how. Or if there's a problem, I can figure out – how is it a problem, based on my experience in doing that previously.

Exhibiting almost impossibly high standards, Nora insisted that while her competence was extremely high, she still expected a higher volume of work from herself. She conceived of competence as a function of both effectiveness and efficiency; therefore, when Nora tackled a problem that demanded a meticulous attention to detail, she felt she moved too slowly through the task to consider her work fully competent:

> My level of competence is extremely high. However, because it is extremely high and because there is so much detail [in certain tasks], I feel that my effectiveness in the time that it takes me to do things is significantly lower. I look at something so closely – the best example I can give is a journal [a grant accounting financial transaction] that I was looking at yesterday with one of the departments. And I kind of dug deep into it and it made no sense, and what happened was – by the time I got through looking through all these journals [grant accounting financial transactions] and giving screenshots and saying what's going on here and all of these things – they sent it back to me and were like, 'Ok I changed this one little thing on the FOAP, the fund number,' but they didn't change it in the description on the journal. And then they didn't take any of my suggestions about how this really relates to the feeds that were in this, and I know this is really detailed. But, the point is that this took me like two – maybe an hour to research. On one

journal! Where I'm going into such minute detail that, by the time they're like 'OK, I fixed it,' I disapproved it again and went in, and fixed it myself to the level of detail that I wanted it to be. Instead of going back through an hour's worth of emails to say, if I have to go back and look at this, this is the information I would like to have. And [I fixed] all the descriptions, changed the FOATEXT [text describing the purpose of the journal], and I wrote them back, "Great! It's approved." It wasn't approved. I disapproved it, re-did it, and then I approved it and just moved on with my life. But that took me *so* long to do. So – the level of competence to look all that up – A+. Effectiveness on getting it done in a timely manner because I have such [a high] level of competence is probably like an F… I'm answering questions and I'm doing all this stuff – and [that] is supporting my feelings of competence, like – I'm a problem solver. But the problem-solving takes so much time that I feel like I am not as effective in the job as someone who can handle so much more volume.

Celeste noted that her feelings of competence took time to build and that competence has to be continually re-visited because of the changing nature of the field:

> I would say – as long as I've been doing what I'm doing, I feel I have a good understanding of research administration, and what our role is, what our challenges are, which are constantly changing.

A common refrain was that competence takes a long time to develop. When asked about her feelings of competence, Cynthia immediately confided the level of uncertainty that she felt her first year on the job. As time passed, she started to trust her feelings of competence because she saw that her work was effective:

> I would say that the first year, year and a half, I did not feel competent. [I] definitely had imposter syndrome. Like, 'How am I allowed to be doing this? What is going on?' Like, this is wild. As time passed, [I] definitely started feeling more competent because it's like, 'Oh ok, I did that – I did it well, I guess!' So that pays – that paid off pretty well, I guess. It's like seeing the fruits of your labor working out brought more confidence, so. Now I feel very competent, and I know I'm effective in my job.

While a research administrator might master a certain skill or process within a few weeks or months, the breadth and depth of knowledge required meant that true feelings of competence came after mastering several of these skills, which might take a full year or longer. Eliza confessed that while she makes fewer mistakes in grant accounting now, her level of competence with grant accounting took years to develop:

> My learning style is, try it and see what happens, and correct from there. Which I've done – over and over and over and messed up a ton of times. So like, for example, with journal entries [a grant accounting financial transaction] – financial accounting is not my strength, it's something I had to learn through this job, I don't have like a background in that at all. I would just – do it. And if it didn't work, I could figure out why it didn't work. So yeah, so I feel like – now I feel more competent because I make less mistakes. And that has taken me years.

After more than twenty years in research administration, Celeste would be comfortable taking on more responsibility for policy development and decision-making than she is afforded. Nevertheless, Celeste recalled that she has grown into the desire for more responsibility:

> If I look back over my career, I'd say at the beginning I definitely wouldn't have felt comfortable [taking on more responsibility]. But, based on my years here and my experience, there's definitely some of those areas that I've highlighted that I would feel comfortable, and I feel like there's a roadblock sometimes.

Supports for feelings of competence. Participants shared two main experiences that supported their feelings of competence: fixing or preventing a problem that had caused them difficulty in the past and being recognized for their work.

I prevented a problem that has caused me difficulty in the past. While making mistakes was often one of the first things that came to mind as an indicator that a participant wasn't competent, it was the experience of identifying a mistake and figuring out how to solve the mistake and even prevent a similar mistake in the future that led to feelings of competence. Eliza explained that the financial accounting isn't a strength of hers, but it's something that she has learned through her work. She used to struggle with journal entries, or grant accounting transactions, which can quickly escalate to a dizzying level of complexity. Eliza conceded that she still makes mistakes sometimes, but as she becomes more experienced, she makes fewer mistakes – and she can figure out the root of those mistakes to prevent them in the future. Eliza shared the satisfaction that she feels at preventing a problem because she had solved a similar problem in the past:

> If there are problems, I'm able to identify them and head them off before they start. I will have a problem at the end, and I'm like, 'Why do I have that problem? I'm going to go all the way back and figure it out.' And then when that situation comes up again, I know what to do moving forward to not have the problem at the

end. I feel like that – where I'll ward off something before it even becomes a problem – that makes me feel competent.

Nora described feelings of relief at resolving a grant accounting issue that will no longer cause the team difficulty in the future. The Accounts Receivable report indicates what grants still need payment from a sponsor. The report is complex and oftentimes imprecise – while it generally gives a good idea about which grant funds need action, the report can also present information that is misleading or outdated. Nora figured out how to identify misleading or incorrect information on the report and how to remove it from future reports, allowing the team to concentrate on the report's actionable information:

> Figuring out how to fix AR [Accounts Receivable] on the backend – which has nothing to do with a grant fund – gives me a huge sense of relief that I'm taking things off of a report that are not even supposed to be there, it's like – some random payment application issue. So that was when I started making those journals, and even pulling off grant funds that were – I don't know, from prior to 2010? Because there's just something weird happening in them? When I finally figured that out – which, I got the hint from [another central university unit], and I would have never thought to look in these two places. But, once that happened, I started to be able to think that I could dig a little bit deeper. So once those adjustments started happening, I really started to look deeper into the grants. So it was this really defining moment where all of a sudden I figured out how to look deep.

I am recognized for my work. Participants noted that recognition of their work supported their feelings of competence. Cynthia explained that while "seeing the fruits of your labor working out" was rewarding, she wanted other people to see her good work as well. When asked what supported her feelings of competence, Cynthia asserted:

> I think, just in general, recognition of a job well done… Just general feedback. I live off of feedback so it's really hard for me if I'm not getting feedback. But, I just take that as a, 'You're doing a good job.'

Particularly striking was the importance of who was recognizing their work. Participants conceded that their teammates or manager might tell them good job, but that the most meaningful recognition was from weaker ties at work: those whom you interact with but who have job functions other than your own. For Eliza, that most meaningful recognition came from department administrators and other central university units, who don't know the exact "ins and outs" of her job:

> I think that the people who work in your job, especially in this position, they know what you're doing, and they know how to do it. While their appreciation means something to me, I think – when you're doing your job well, other people who don't know the ins and outs of your job know you're doing it well. That makes me feel – not better, but it's just, maybe a more meaningful recognition. And makes me feel like, 'Oh, I'm good at this, I'm so good at this that people who don't really know what I do day to day, who are not involved in my immediate work every day – they're seeing that and that makes me feel good.'

Hindrances to feelings of competence. Participants shared three main experiences that hindered their feelings of competence: making a decision but senior leadership reverses it without much communication; lacking time to pursue professional development or process improvement; and feeling inadequately prepared to train others.

I make a decision, but then senior leadership says no to it without telling me why. Several participants noted the disappointment and confusion of making a decision on a course of action only to have senior leadership reverse or undo their decision. Eliza explained her feelings of frustration and doubt that resulted when senior leadership would reverse or undo her decision:

> I feel like sometimes what hinders my feelings of competence is when I've been implementing something in a way that makes sense to me, that makes sense to my colleagues, that avoids loopholes, all these things that I've thought through, and my leadership squashes that. Or they don't even want to have a conversation about where we can see commonalities or compromise. So that will make me feel like, 'Oh, I felt I had mastered this, I know what I'm looking for, I know what I see [and] what I don't see, I know what should be happening [and] what shouldn't be happening.' And my leadership is like, 'No.'… I feel like, where I think I've mastered something, where I think I am competent – someone else higher up has a different idea and isn't able to communicate that with me.

Having their decisions reversed by senior leadership made research administrators feel less competent and engendered feelings of doubt about their abilities because they didn't know why the decision was changed. Similarly, research administrators doubted their competence when senior leadership declined to make a decision after research administrators developed a possible solution to a problem. Nora recounted her experience with trying to get a model approved to help streamline the closeout process at the end of an award. The fixed price residual balance policy dictates where leftover money is allocated at the end of a fixed price award. By plugging award amounts and rates into the

Excel model that Nora developed, a research administrator could accurately and efficiently determine correct closeout amounts as dictated by fixed price residual balance policy. In short, the model would facilitate a quicker and easier closeout process. Nora spent a year trying to get the model approved, but was continually rebuffed:

> The things that make me feel incompetent are where I'm going, 'This makes so much sense' and someone above me is saying, 'Nope!' For no reason. Like – that is always the thing that will drive me crazy, where I am like – I know this is right. I know this is effective, this is the way to do it. This means you have mastered the way things are supposed to be done. It took me *a year* to get someone to sign off on the fixed price residual model… We had gone back so much, back and forth. They were questioning the competence of the model that I had created when the person questioning it didn't actually understand. By the time we got a year around later to saying, 'Ok, let's break this down,' and then they're like, 'Oh! That makes sense.' So what hinders my sense of competence is feeling like something makes complete sense and having a completely different outcome than I was expecting. And then I'm like, 'Is this just me?' Like – I've been doing this long enough that this shouldn't be an issue of what makes sense and what is best practice.

I do not have time to pursue professional development (on a personal level) or process improvement (on an organizational level) because I have so much to do. Two tasks stuck out as those that are sacrificed when a research administrator had "too much on their plate": professional development, or the improvement of their professional competencies; and process improvement, or the enhancement of processes that make their work better (more efficient and more accurate). Astutely, participants pointed out that time was a limiting factor, not just to pursuing professional development, but for implementing what they learned. Eliza implied that she would be more interested in pursuing professional development to learn about how she could implement process improvements, but that she doesn't have the time or energy to commit to those pursuits:

> I think the [training] opportunities certainly exist. Like, with the big organizations like NCURA [the National Council of University Research Administrators] and those sort of overarching groups. The opportunities certainly exist. I don't have enough time to take the information, go to a training, absorb it – and then, have enough energy to implement it in our department. So, I think the opportunities exist for professional development and training and learning – I guess [I] feel like – I would say I personally don't have the capacity… I remember going to an effort certification training or a cost share training when I went to the NCURA Level I [conference]. And I was like, 'This is great. How would this work?'… I think it would be interesting to attend a training, gather that information, and then bring someone in to implement that. Help us implement it. Like – which hopefully if we're fully staffed that could be me, right? Like I could learn something, bring it back, move forward. But I don't think that that's – within my capacity right now? But yeah, I would say the opportunities exist. I enjoy learning about those things, but the execution of those things in practice at the [institution] is more difficult to accomplish.

Celeste also asserted that while she may have the financial resources and support from senior leadership to engage in professional development training, she doesn't have the time:

> I think the support [for professional development] is probably there? But I don't have the time that I used to have. Like if I want to step back ten years ago, I definitely had time, right? The support is there, oh yeah, I definitely think if you want to do that, go ahead and do that.

Enacting process improvements supported research administrator feelings of autonomy and competence both, but it is a time investment. It takes time to evaluate the current process, consider and test alternatives, gather feedback from stakeholders, decide on a new process, and document and communicate the change. As described above, Cynthia was tasked with improving the outgoing subawards process, which the department desperately needed. The changes that she implemented not only improved turnaround times and minimized institutional risk, but also supported her feelings of autonomy. However, she confided that with her current workload, she couldn't take on a process improvement of that magnitude. Cynthia observed, "I'm really glad I did [the subaward process improvement] when I started because I absolutely would not have had the capacity to initiate that after one year, two years."

Process improvement is a critical exercise that not only benefits the institution in improved efficiency and accuracy, but also that research administrators find rewarding. But when there is limited time, participants need to do the "day-to-day" tasks first; the systematic, but time-consuming, evaluation of how to improve processes is sacrificed. Celeste noted her suspicion that the team needed to re-evaluate their processes and structure based on the growth in research volume that the institution has been experiencing in the last few years. When asked how being understaffed affected her feelings of competence, Celeste shared that she felt less effective in her job because her daily tasks take so much time and attention:

> I'm glad you brought [being understaffed] up, because – having the time to kind of address – I have not had time. I thought about it, but I haven't had time to really dig in and pull together ideas and work with my team on this, on how we are structured based on the growth that we've experienced recently. And it's weighing heavily on my mind, but I can't get past the day-to-day stuff because I'm really wanting everyone to be so successful and keep the, you know, the ship afloat, when we get understaffed and under-resourced. I just, I would love to [re-evaluate our processes and structure], but I don't have the time and I don't have the time to collaborate with my team because we're just, like I said, trying to keep things afloat. And I a regular basis, I would like to think that I could start to turn down the corner and go down that path, because I do think that does affect how I feel about my competence.

Eliza expounded on this sentiment, replacing the analogy of staying afloat with an analogy of losing the forest for the trees:

> When we were mostly fully staffed and we had five people – I felt like there was a brief moment there where I could see the forest through the trees. Where I could say, 'Ok, I've had my head down for so long'… I have just been in this zone – in this blinder zone, just trying to get the work done. But – if we had a fully staffed team, [more senior teammates] and I could take a step back and say, what are process improvements, how can we onboard more efficiently, you know… all

> those questions. But because – like, I can't – I cannot see the forest through the trees, you know. I only see the trees right now.

I am not prepared to train others adequately. Training others was a glaring issue. Research administrators are responsible for training others, which turns out to be a large time commitment. Exacerbating the issue of the frequency of training others is that research administrators are not trained or prepared on how to train well. Eliza confessed, "Training is this huge burden that we're not prepared [for]." Training new team members is a fraught process because it initially means more work now. Eliza recalled her frustration at the expectation that the SPA team would train the consultants who were brought in to lighten their workload. Two teammates accepted other jobs, bringing the SPA team's size down to four people. The team's workload was so heavy that senior leadership decided to bring in consultants to help with the work. However, in the short-term, the task of training the consultants was just another addition to Eliza's workload:

> In a lot of departments in a lot of areas, onboarding staff is exciting because ultimately that means you have less work in the future. But the immediacy of training someone and needing them to be caught up – and depending on your staff person, if they can catch up, or if they're going to stick around – it's a hard place to be at. It feels like there's more work for ultimately less work – maybe.

Nora explained that she finds it difficult to train others because she does not trust her training technique. With what she considers a unique learning style, Nora spends too much mental energy and time trying to determine how to impart the knowledge that she wants to convey:

> I'm terrible about the training…I don't like training others. Because – I have such a different training experience. So I don't like training anybody. I think that maybe should be [a] goal, to be a better trainer. I try to, but I've always found myself getting too far in the weeds with somebody. I can't be the [trainer that is] broad. I'm like, "Oh, this, then this, then this, then this, then this," and teeny little things that no one can keep in their brain. It's so – that's why I think it just takes so much energy for me, because I'm constantly saying, in my brain, 'What do they need to know right now? And what details should you just leave out, completely?'… Yeah. I would love it if there were research administration trainers.

Cynthia asserted the need to acknowledge the extent to which research administrators are responsible for training others:

> I've been harping on it for probably the last year or six months – recognizing that the responsibility to train and onboard ORSP staff, all grant personnel in every department, and then also fill their lack of department support needs was put on the SPA team's research administrators.

Cynthia emphasized, "We need someone who can make a training program and do onboarding… I feel like I've just been training people for the past two years. That's the other thing, that's not even in our job description." These comments that mention onboarding reveal another misconception: training and onboarding are not the same task and do not accomplish the same objectives. Onboarding is an entirely different process that includes welcoming a person into the culture of the institution, thereby introducing an entirely new set of skills and responsibilities that research administrators are expected to know.

Conclusion

Research administrators on the SPA serve a comprehensive function as a part of the research community at the University of Denver. Some of the experiences that participants described do not fit neatly into a single theme of autonomy, relatedness, or competence. Some experiences affected feelings of both autonomy and competence (for example, making a decision but having it questioned by senior leadership), relatedness and autonomy (for example, the importance of a supportive manager) or perhaps even all three themes (for example, training). Participants noted overall high feelings of autonomy, relatedness, and competence, and shared several experiences that both supported and hindered these feelings as they related to job satisfaction. This rich description offers an in-depth exploration of the nature of work of a research administrator and how these experiences affect participants' feelings of autonomy, relatedness, and competence.

Chapter Five: Discussion, Implications, and Recommendations

The purpose of this program evaluation was to examine the elements of the job as a research administrator that affect job satisfaction for members of the Sponsored Programs Administration team in the Office of Research & Sponsored Programs at the University of Denver. This program evaluation aimed to answer two evaluation questions:

1. How do research administrators in the Sponsored Programs Administration team at the University of Denver describe their work experiences?
2. What elements of the work affect (or lead to) job satisfaction?

The findings presented in Chapter 4 answered these evaluation questions through a general qualitative inquiry approach, suggesting that feelings of autonomy, competence and relatedness are critical to job satisfaction, but that they may be incomplete in extraordinary circumstances like notable understaffing.

This chapter is the culmination of the empirical findings shared in Chapter 4 that addressed the evaluation questions guiding the program evaluation. In this chapter, I connect the program evaluation findings back to the previous literature. Next, I share the practical implications of the program evaluation to the profession of research administration and higher education more broadly. I conclude with recommendations for future research.

Discussion of Findings

The findings from this program evaluation illustrate the nature of the work as a research administrator as well as how the job experiences relate to job satisfaction through the three themes of autonomy, relatedness, and competence. The nature of the work includes the job functions that a research administrator carries out and the work environment in which a research administrator operates.

Job Functions

The job functions of a research administrator can be broadly conceived as communicating, helping and supporting, problem solving, and training.

Communicating. Cynthia, Eliza, Nora, and Celeste described communicating with many different stakeholders, both internal to the institution (researchers, department administrators, other central university units, and other department members) and external to the institution (collaborators and sponsors). As noted in the findings, research administration is an increasingly complex field with a wide breadth and depth of knowledge required. Research administrators must communicate complex topics clearly and succinctly so that internal constituents without the same foundational knowledge in research administration can understand. For example, as Cynthia worked with a researcher to prepare a proposal for submission, she recalled that miscommunication is a constant concern because she is responsible for communicating the complex information of the proposal requirements. Furthermore, research administrators must tailor their communication to their audience. While department administrators may know the federal regulations and institutional policies shaping research administration, researchers may not have this same level of awareness as they focus their attention on their field of study instead of administrative details. Therefore, communicating the same content to a department administrator and a researcher requires a uniquely tailored message.

The literature asserts the importance of communicating as a research administrator but focuses attention most on the communication between the research administrator and researcher (Cole, 2007, 2010; Deitz, 2011; Derrick & Nickson, 2014; Mullen, 2009; Shambrook, 2010; Spencer & Scott, 2017). While this relationship is a critical one, a research administrator must facilitate communication between several different stakeholders, such as department administrators, other central university units, collaborators, and sponsors. For research administrators in a central unit, communicating effectively with department administrators is arguably a more important line of communication because department administrators act as intermediaries between central research administrators and researchers. A cordial and effective line of communication between central and department administrators is critical because it can influence the amount of time and effort that both parties dedicate to communication. Nora, for example, remembered the difficulty of working with a department administrator who was not grasping the level of detail that Nora wanted included on documentation. On the other hand, Eliza enjoyed the fluidity of her communication with a department administrator who had a long tenure at the institution because they understood each other well. Similarly, Cynthia’s workload was more management once the units she supported hired a department administrator with whom Cynthia communicated effectively.

Helping and supporting. Cynthia, Celeste, Nora, and Eliza all recounted how helping and supporting is a main function of their job. The “helping and supporting” terms are indicative that the help and support that SPA team members provide is for internal customers, or people in the DU research community, which invokes a more relational and long-term interaction. Helping the SPA team members was a collaborative exercise that allows research administrators to draw on their collective team expertise to find the best approach or solution, while supporting the DU research community has strong elements of customer service.

Participants described the importance of helping and receiving help from their teammates on the SPA team. Drawing on the team's collective knowledge was a critical step in problem solving, for instance. Helping the team by sharing knowledge and best practices contributed to participants experiencing a sense of belonging with their teammates, as Nora described. Conversely, asking for and receiving input from the team also contributed to participants feeling supported. Notably, the function of helping research administration teammates is understudied, both for elements of social support and camaraderie, but also for the transfer of knowledge when research administration training is relatively informal. Spencer and Scott (2017) explore a "teamwork" theme (Spencer & Scott, 2017) in a research administration office, but conceived of it more broadly on an institutional level than of an immediate team of people working in a similar job function like the SPA team mates.

Participants often referred to their role in supporting researchers and supporting the research of the institution. Especially given the growing complexity of the types of responsibilities that research administration assumes and the changing nature of the work that participants described, the "supporting" terminology is likely intentionally vague. Not only is the term inclusive of the wide variety of functions that research administrators currently perform, but it also allows space to include responsibilities that aren't strictly in a research administrator's job description, which contributes to a heavier workload as turnover occurs. However, the supporting function primarily describes the various ways in which research administrators apply their breadth and depth of knowledge by facilitating the compliant and appropriate actions of researchers and department administrators. If a researcher or department administrator is uncertain of how to interpret a sponsor's proposal preparation instructions or how to allocate expenses to an award with the appropriate documentation, the SPA team is available to provide or find those answers.

This finding provides a more in-depth understanding of the supporting role of research administrators. The literature refers to a supporting role with considerable frequency (Allen-Collinson, 2007; Derrick & Nickson, 2014; Kerridge & Scott, 2018; Langley & Heinze, 2009; Leyland et al., 2020; Nguyen & Van Gramberg, 2018), but rarely defines more specific details like what forms the support take, who receives the support, and how often the support happens, for example.

Problem solving. Problem solving is closely tied to helping and supporting. While helping and supporting is facilitating actions of others, sometimes problem solving is an antecedent to that facilitation if a research administrator isn't sure of the appropriate next step or response themselves. The norm on the SPA team is that problem solving starts introspectively; participants implied a certain derision for a person who immediately asks others for help on a problem without first dedicating some time to problem solving on their own. Their distaste for hasty questioners also ties into the helping and supporting function, the breadth and depth of knowledge required, and the heavy workload. If someone approaches a SPA team member with a problem, they will dedicate time in their day to solving the problem and communicating the solution. When the problem relates to the breadth and depth of required knowledge, the SPA team is the best resource to solve the problem. However, sometimes the SPA team is asked to solve problems that relate to other functions of the institution or that don't involve research administration expertise. The SPA team still feels obligated to solve the problem, but to explore a problem outside of their specialized knowledge is not the most effective use of their time, especially when they are balancing an already heavy workload.

When the opportunities for problem solving test their research administration expertise, participants felt it was a rewarding challenge. Eliza, Nora, and Cynthia found that opportunities for problem solving were reliable indicators of growth, especially when they could solve or even prevent a problem that had caused them difficulty in the past. Nora even conceived of certain types of problem solving as an intrinsically rewarding part of the job – more like a puzzle to be solved for the joy of the puzzle itself. In fact, she lamented that she didn't have enough time to solve the complicated "fun problems."

Problem solving demands critical thinking and decision making. The ability to evaluate potential solutions and to implement the one that they think is best was one of the strongest supports to participants' feelings of autonomy. However, participants complained of policies not being consistently applied across the institution and explained that inconsistent policy application restricts their problem-solving and decision-making abilities, which will be discussed more in the next sections.

This finding also expands on our understanding of research administrator job functions. Some studies refer ambiguously to the importance of a research administrator's ability to solve problems, yet decline to expound on what types of problems and why problem solving is important (P. S. Martin, 2021; Zink, 2018). Other sources assert the importance of problem solving as a strategy to illustrate professionalism is the eyes of the researchers whom a research administrator supports (Mullen, 2009; Reardon, 2021). In contrast, SPA team members didn't mention problem solving as a method of the external validation of proving professionalism for others, but for the internal validation of benchmarking growth in themselves.

Training. Cynthia, Eliza and Nora noted the expectation that they train several populations across the institution but felt the most pressure and burden for training department administrators and newcomers to the SPA team. Training new teammates presented an odd cognitive dissonance with their heavy workloads and perceived lack of competence in training. A new teammate will always have an adjustment period when they are acquiring institutional knowledge and learning about processes and procedures, making them temporarily less efficient and effective in their work. On the SPA team, this period is likely longer than in other jobs because of the varied work and need to learn on the job. As the findings revealed, training is one of the main job functions, requiring team members to allocate time to the task of training newcomers and to forgo time on other responsibilities. Rationally, time spent training a teammate now will pay off later, when the teammate is operating at their full capacity because they have acquired the skills and knowledge to do the job. Therefore, a sacrifice in personal efficiency now will ultimately contribute to the team's efficiency later by developing another fully contributing team member. However, as the SPA team's the workload grew, the cost to take time on training teammates – a longer-term investment of time – was increasingly too high. SPA team members felt compelled to prioritize the urgent needs of their day-to-day workloads and wanted to postponed training a new teammate until a day when their workload wasn't so heavy and their tasks so urgent. Recent turnover compounded the trepidation of investing time in a new teammate that might only pay off in a reduction in workload a year or more later: could they risk investing their time in someone who might not stay with the team long enough to see the return on investment.

Several studies in the literature examine methods and best practices for research administrators to train others in the research community, but with researchers as the main population of focus (Deitz, 2011; Derrick & Nickson, 2014; Langley & Heinze, 2009; Leyland et al., 2020; Marina et al., 2015; P. S. Martin, 2021). However, very little scholarly or practical research discusses best practices for improving the training competency for research administrators who must train new teammates who have little to no background in the field. The assumption is that having the knowledge and skills to complete the job must mean that the person can also transmit that same knowledge to others. However, newcomers to the team may have a different learning styles, as both Nora and Eliza realized. The transfer of knowledge seems like it should be seamless, but SPA team members struggle with it and don't like doing it because they recognize that their competence in the task is low.

Work environment

The work environment that the SPA team operates in includes the organizational environment, the physical environment, and the working conditions.

Organizational environment. The main finding concerning the organizational environment of the SPA team revolved around policies in the organization. Nora, Eliza, and Celeste observed the necessity to know and enforce institutional policy, but experienced frustration when policies were not consistently applied. Participants experienced perhaps the most frustration with the enforcement of the facilities and administrative (F&A) rate policy. Nora and Eliza described wanting to apply the F&A rates consistently across all awards in their departments but felt that senior leadership would make exceptions to the rule by approving reductions in the F&A rate. Having exceptions approved after they had tried to enforce the policy undermined their confidence the next time another F&A waiver request arose. The policy stated that F&A rates would be applied according to the type of sponsor and the type, but the SPA team knew firsthand that that wasn't the case. The SPA team knew what to say and who to ask to get an F&A waiver approved almost every time. Therefore, these exceptions put the SPA team in an awkward position. They struggled to take a firm stance on a policy that they knew wasn't applied firmly. When a researcher asked a SPA teammate for help getting an F&A waiver, the SPA team didn't know whether to prioritize enforcing the F&A policy or to prioritize helping the researcher sidestep the policy. Certain PIs could get the F&A on an award partially or totally waived every time, and usually these PIs were ones with large award portfolios. The SPA team struggled with lingering questions of equity and fairness each time an F&A waiver was granted after they had tried to apply the F&A rate that was consistent with the policy. Furthermore, participants questioned their own judgment and competence when senior leadership approved waivers that participants had initially rejected. The inconsistency led them to doubt their knowledge, making them wonder if they could do their job adequately if senior leadership was backing a different decision than they had made.

Prior research demonstrates that higher education employee satisfaction can decrease with perceptions of unclear policies of the university (Walker, 2017). However, this finding illustrates that satisfaction may be even lower if employees themselves are responsible for unclear or inconsistent policies. In a similar vein, Derrick and Nickson (2014) argue that research administration policies are understudied for their impact on external funding performance (by qualitative measures such as university rankings and proposal success rates) and on researchers. Little research explores the impact of research administration policies on research administrators, or those responsible for enforcing the policies.

Physical environment. The transition to remote work precipitated by the pandemic had a considerable impact on the physical environment of the SPA team's work by necessitating a period of fully remote work that had not previously been allowed. Correspondingly, some participants noticed a concomitant increase to the flexibility in when they could get their work done in addition to the increased flexibility in where the work took place. Participants communicated a considerable amount of flexibility in their working hours, particularly when they worked remotely (whether they worked just a few days a week in a hybrid schedule or worked remotely full-time). Eliza, Nora, Celeste, and Cynthia felt the freedom to get work done when it was convenient for them based on their own schedules and noted this as a support of their feelings of autonomy. However, there wasn't consensus about the effect of the physical location of the work on participants' feelings of autonomy, although the change to remote work is a logical precursor to the increase in the flexibility of work hours. Some SPA team members discussed the importance of remote work in relation to their feelings of autonomy and job satisfaction rather nonchalantly. Furthermore, there was a lack of consensus on whether remote work improved or hindered feelings of relatedness.

One possible explanation for the lack of consensus is the presence of both hybrid and fully remote team members on the SPA team. It is possible that some SPA team members have come to consider remote work foundational to their working environment. The initial change to remote work happened over three years ago, and some SPA team members have worked remotely full-time since the pandemic forced everyone home. They may have adjusted to their fully remote work environment and therefore no longer discern the resultant increase in flexibility and autonomy. They may not perceive a comparable difference between remote work and work in person because they haven't made the comparison in several years. Nora's insouciant attitude, for example, toward when her work gets done is itself an indicator of the high level of autonomy that participants experienced to get their work done on their own schedule, but that flexibility in work is facilitated by Nora's ability to work remotely. Meanwhile, the SPA team members who work on a hybrid schedule experience the shifts in their perceptions of autonomy and relatedness on a weekly basis as they come in to the office one day and work remotely the next. Therefore, hybrid team members may have a more acute awareness of how the differences in the physical environment of the work affects them. Additional research is needed to better understand how a research administrator's physical environment affects perceptions of autonomy and relatedness, and if those perceptions are further influenced by working in a hybrid schedule or working remotely full-time.

Working conditions. The working conditions that participants described included the variety of work, a heavy workload, changing responsibilities, the necessity to learn on the job, and the breadth and depth of knowledge required.

Varied work. Eliza, Nora, Cynthia, and Celeste all noted that there are a multitude of tasks in their work. On a positive note, the variety of work contributes to the job's interest; the tasks that require investigation and problem solving are rewarding to solve, but the rote tasks provide a mental break in which participants can get their work done with less concentrated mental effort. However, the varied work also factors into the need to learn on the job and the difficulty in training others. More routine work would be easier to standardize for training. The SPA team has to cover so many topics in training that frequency doesn't reinforce the training. Rather, the SPA team might teach a new employee a skill but then the new employee doesn't get a chance to put it into practice until several months later. By then, the task can't easily be replicated because the training took place so long ago; the employee has to rely on their notes from the initial training or on their problem-solving abilities.

Studies exploring pre-award services noted that proposals are all different, so pre-award services encompass a wide variety of tasks (Deitz, 2011; Martin, 2021). Meanwhile, the SPA team is responsible for both pre- and post-award services. This finding reinforces that a combined office that supports both pre- and post-award services is responsible for an even wider variety of work.

Heavy workload. Celeste, Nora, Eliza, and Cynthia's experience of a heavy workload was at least in part a function of the recent turnover that the SPA team experienced. For the team to be approved to hire one additional grant administrator (which would bring the team's total to seven members) only to have two grant administrators leave the team (bringing the team's total to four members) precipitated an enormous increase in work for the remaining SPA team members. The internal audit finding that the SPA should have had ten to twelve members instead of its long-time six members only emphasized how dire the understaffing was, which resulted in a heavy workload for the team. Therefore, this finding is strongly related to the study period. If the same study were to be conducted today when the team has seven members (including the one additional grant administrator position that was approved shortly before the study began), participants may not report such a burdensome workload.

However, the heavy workload may also be a symptom of the recent change to an R1 institution. The R1 designation reflects the institution's growing research volume. For the SPA team's workload to stay comparable to the workload before the R1 designation, a concomitant increase in research administration staffing support would match the increase in research volume. However, the size of the SPA team hadn't changed in several years while the institution's research volume more than doubled over a ten-year period. In this context, a heavy workload is not a surprising finding, but as Celeste noted, perhaps a disappointing one.

All four participants noted a heavy workload that was difficult to manage. Cynthia found her heavy workload unsustainable and left the SPA team for another job that she hoped would be more manageable. Although she remained on the team, Eliza confided that the heavy workload made her think more and more about quitting. This finding supports evidence from previous observations that a heavy workload is a precursor for high work stress (Shambrook, 2012) and burnout (Tabakakis et al., 2020) in research administrators, and that burnout leads to symptoms of emotional exhaustion and increased turnover intentions. Other studies note that a persistently heavy workload is an indication that an evaluation is needed to determine if the research administration unit's structure is well-aligned with the team's responsibilities and resources (Langley & Heinze, 2009; Leyland et al., 2020). Tellingly, Celeste confided that she had increasingly felt the need to re-evaluate the structure of the SPA team as the institution's research volume grows, but her day-to-day responsibilities were so burdensome that she couldn't find the time to dedicate to an evaluation. This finding also reveals that while heavy workloads should prompt an evaluation, heavy workloads may simultaneously preclude an evaluation.

***Changing responsibilities*.** Changing responsibilities are closely related to learning on the job and supporting the research institution as a whole. Federal regulations that guide research administration are updated frequently, generating changes that affect institutional policy and research management best practices. As the central research administration unit, the SPA team is responsible for staying abreast of these changes and helping the institution to respond according. Furthermore, the SPA team must interpret the changes for relevant stakeholders, like researchers and department administrators. The SPA team not only has to respond on the changing landscape by continually re-examining their job responsibilities, but they also have to demonstrate how the changes affect research administration processes and procedures across the institution.

This finding is consistent with the literature's acknowledgement that federal research policies and landscape can change rapidly (Deeter et al., 2020; P. S. Martin, 2021; Roundtree, 2021; Schaller-Demers, 2015; Shambrook, 2012; Shelley, 2010;

Spencer & Scott, 2017; Welch & Brantmeier, 2019). However, this finding extends our understanding of how changing policy affects the day-to-day work of a research administrator. To perform their responsibilities competently in a changing regulatory environment, a research administrator must always be aware of the latest policy updates and federal guidance changes. This may involve staying connected to federal agencies that enact and enforce the changes or to professional networks who help to interpret the changes. Then, a research administrator must evaluate the institutional processes and procedures that are affected by the update to determine if any internal changes are necessary. If so, a research administrator must determine what change is needed, implement the new institutional policy or procedure, then communicate the change out to the research community.

Learning on the job. The importance of a research administrator's ability to learn on the job on the SPA team cannot be understated, given that research administration training programs are virtually non-existent and that each member of the team was new to the field when they started in their role. Cynthia, Eliza, and Nora all recalled sitting next to a teammate, watching them in their tasks, and replicating the work by themselves. This is hardly a sophisticated training methodology, and what's worse, the SPA team acknowledged that they didn't feel very effective or efficient in their training techniques. Therefore, the bulk of the job of research administration must be acquired through experience. Problem solving as a learning mechanism was critical, which is why participants so admire a tenacious problem solver who dedicates time to exploring their own solutions before asking for help. If new team members are not willing or able to learn on the job, more experienced team members must dedicate additional time to extra training and review, which exacerbates an already heavy workload.

For the dearth of research administration degrees, certificates, and training programs, the phenomenon of learning on the job is not widely explored in the literature. There are limited formal education opportunities to prepare for research administration (at the time of writing, there are seven certificates or master's degrees in research administration in the entire United States), so newcomers to the team must learn on the job so be a successful addition to the unit.

Breadth and depth of knowledge required. Celeste, Nora, Cynthia, and Eliza all described that they are responsible for knowing a wide range of topics, but also that they need to apply this knowledge in very particular circumstances that are dictated by a nuanced understanding of the topic, policy, or procedure. The breadth and depth of knowledge required is closely related to how long it takes for research administrators to feel competent in their positions and the need to learn on the job. A research administrator may dedicate several months to becoming an expert in a certain area of research administration, extending the depth of their knowledge. However, the breadth of knowledge still exists, so it will take several more months to achieve a similar depth of knowledge in another requisite of the work of a research administrator.

The breadth and depth requirements also point to the necessity to help and ask for help from SPA teammates. One teammate becomes an expert in a certain specialization – like closeouts, as Eliza did – while another teammate expands their expertise in another area – like Nora did with the Accounts Receivable (AR) report. Both administrators are responsible for managing their closeouts or monitoring the AR report. However, because as one teammate delves deeply into a topic, they can provide a heightened level of expertise for certain topics. With the collective knowledge of each individual teammate, the SPA team can manage the breadth and depth of the knowledge required.

Experiencing a sense of choice and acting with your own volition

Supports for feelings of autonomy came from the SPA team feeling that their manager trusted them and from taking control of a task without supervision. Both involve a distinct lack of stringent oversight; participants described how glad they were that they weren't micromanaged or surveilled.

Feeling trust from their manager was closely tied to strong feelings of relatedness as well as autonomy. When Nora, Cynthia, and Eliza felt the trust to achieve their work tasks, they extended the same trust to their manager. Those feelings of mutual trust encouraged deeper feelings of support and camaraderie, which led employees to experience greater job satisfaction and discouraged thoughts of leaving for another job.

Furthermore, allowing employees to operate without strict supervision enabled Cynthia, Celeste, and Nora to be driven by self-motivation. Instead of worrying about being watched or scolded, the SPA team could turn their attention to producing strong results, which made them more engaged in their work. The freedom the SPA team felt made them feel valued: they could decide how to approach a task, letting them harness their own unique approaches and creative solutions.

On the other hand, a lack of communication from senior leadership was the root cause of hindrances to feelings of autonomy that Nora, Celeste, Cynthia, and Eliza all noted. The SPA team both wanted senior leadership to listen more and convey more. The SPA team was suffering from what Flynn and Lide (2022) refer to as a "communication miscalibration": a mismatch – or a gap – between the preferred and perceived level communication from senior leadership.

Participants wanted senior leadership to be more transparent and communicative; for example, Eliza wanted senior leadership to acknowledge how hard it was going to be for a few months while the SPA team was understaffed. She wanted to know that senior leadership was aware of the toll that the turnover was taking on the team. The SPA team didn't just want senior leaders to take action – they longed to know that senior leaders heard them at all. This is consistent with the finding that leaders are more often perceived as not communicating enough, rather than communicating too much; perceptions of under-communicating lead employees to view senior leaders as less empathic and less qualified for leadership (Flynn & Lide, 2022).

Experiencing the feeling of belonging and building a sense of community

SPA team members suggested that their strongest feelings of relatedness stemmed from a solid foundation of trust with longtime colleagues and from supportive management. Both point to the importance of employee retention across the institution – not only for managers that have a direct impact on an employee's experience but also for employees that would appear to have a less direct impact on an employee's feelings of relatedness.

Celeste and Eliza felt more strongly tied to colleagues who had been at the institution a long time. This suggests that feelings of relatedness can't be generated by merely spending one fun afternoon together. Rather, the sense of belonging is cultivated through numerous positive interactions in which an employee learns to trust and rely on a colleague. These touchpoints may be brief or infrequent, but they build a foundation of trust and understanding upon which strong feelings of relatedness can blossom. Therefore, when an employee leaves the institution, they leave behind more than just a gap in institutional knowledge; they leave a hole in the social fabric of colleagues who trusted and relied on them. Tenure at an institution allows an employee to accumulate valuable knowledge, skills, and behavior (Guzzo et al., 2023). The findings from this study point toward an additional amplification these advantages, that employee tenure also has positive social benefits on coworkers who have learned to trust and rely on them. This finding corroborates previous observations that employee turnover emotionally affects those employees left behind, especially if they had a close relationship (Jo, 2008).

The reliance on a supportive manager was closely related to feeling trust from their manager. The SPA team manager gave her employees the space and freedom to operate autonomously but maintained strong avenues of communication so that employees felt supported and connected. More important, the SPA team's feelings of support and relatedness weren't just tied individually to their manager but expanded out to their teammates and institution. Feeling support from their manager made Nora, Cynthia, and Eliza feel connected to each other and to the team. In fact, the support from the manager was so crucial that participants described it as one of their main motivations to stay in their jobs when other considerations like workload were enticing them to quit. If their manager were to leave the institution, the SPA team wouldn't be far behind. The employee-manager relationship is a crucial element in employee retention, which logically demonstrates that retaining effective managers who influence their employee's turnover intentions is even more critical. Similarly, previous research suggests that how long an employee stays at an institution is strongly connected to their relationship with their immediate supervisor (Jo, 2008; Walker, 2017).

The main hindrance to feelings of relatedness were that Celeste, Nora, Eliza, and Cynthia were all overworked because the SPA team was understaffed. The understaffing stemmed both from the immediate concern of recent turnover and the more systemic concern of staffing support that wasn't keeping pace with growing research volumes. As noted above, strong feelings of relatedness result from an investment of time; they take time to nurture and time to mature. With so many urgent tasks that needed immediate attention, the SPA team couldn't invest their time in things like community-building. Correspondingly, they noticed that senior leadership couldn't be bothered to recognize them for what they could accomplish with such a small team – the focus was on the mistakes they were making or the tasks that were falling through the cracks. This led to the SPA team's feelings of emotional distance with senior leadership.

These findings indicate that the SPA team's feelings of relatedness, both positive and negative, are influenced by employee retention or a lack thereof. Retaining employees contributes to feelings of relatedness for their colleagues and direct reports; losing employees leads to a deterioration of feelings of relatedness.

Experiencing feelings of mastery and effectiveness

Participants shared two main experiences that supported their feelings of competence: they could fix or prevent a problem that had caused them difficulty in the past, and they were recognized for their work. Cynthia, Nora, and Eliza all shared the satisfaction they felt at figuring out how to prevent or mitigate an issue that had troubled them before. Inherently, that feeling of growth is precipitated by a mistake. This finding points to a latent opportunity to reframe a mistake not as a concern, but as the first step in learning how to do something right.

As for recognition, Cynthia, Celeste, and Eliza conceived of recognition as more of an acknowledgement of positive work performance. Most of the acknowledgment that they referred to was informal: a kind comment or a quick email could be enough to reinforce positive feelings. They appreciated when people noticed their work and praised them for it. The praise was especially fulfilling if it came from someone who didn't have complete knowledge of the SPA team's day-to-day work. If someone who doesn't know the work well can tell that the work is good, the participants' logic went, then it must be conspicuously good. This finding extends our understanding of the power of recognition to support feelings of competence in a research administration setting.

Participants also shared three experiences that hindered their feelings of competence: making a decision, but then having their decision reversed or undone by senior leadership without a clear explanation; not having enough time for professional development or process improvement; and not feeling prepared to train others adequately.

The root cause of feeling a lack of input in decision-making lies not in a lack of opportunity, but in a lack of clear communication from senior leadership on why or how other decisions are made. As participants experienced with diminished feelings of autonomy, senior leadership doesn't communicate enough of how the SPA team's input is taken into account. However, this finding points to a two-fold result: when senior leadership doesn't communicate how their input is utilized, the SPA team not only feel less autonomy, but also feel less competence. When senior leadership reverse or their decisions or don't act on their input without an explanation, Nora and Eliza assume it must be because their judgment or recommendation was flawed. In turn, they question their knowledge and ability to contribute in the future. With more context around the decisions, participants may be able to align their future decisions more closely with senior leadership's intentions, rather than forcing senior leaderships to step in above them to correct a decision with which they don't agree. Participation in decision-making opportunities supports institutional research staff's feelings of effectiveness, while the lack of those opportunities can lead to higher turnover intentions (Knight & Leimer, 2010). However, this finding expands our understanding of the consequences of a lack of decision-making input. Employees who don't get to participate in decision-making may also experience decreased feelings of competence.

Having too much to do also hindered feelings of competence. A heavy workload piled up so much that the SPA team could no longer turn their attention to making their work more effective and efficient. The inability to seek improvement conflicts with changing job responsibilities: as the context of the work changes, the team needs to re-evaluate how the work can be done most effectively to stay compliant with federal mandates. Celeste, Cynthia, and Eliza explained that they don't have time to pursue professional development or process improvement, even though they have financial support from their institution to participate.

A final hindrance to feelings of competence was a lack of training ability. Despite their experience and feelings of competence in several areas of their work, Cynthia, Nora, and Eliza don't feel prepared to train others as efficiently or effectively as they would like to, especially when they already have a heavy workload. As discussed above, SPA team members felt while they had high levels of knowledge and experience, they couldn't adequately impart that knowledge to others. Although the SPA team felt competent in complex topics and tasks like interpreting federal guidance and navigating institutional policy, they felt uncertain and insecure about teaching this knowledge to others. The feeling of incompetence in training were so acute that sometimes they put off the task altogether. This finding of a lack of competence in training reveals a gap in the research administration literature. Most recommendations on research administrator training cover how to improve customer service for researchers or on how to complete administrative processes (P. S. Martin, 2021), not on how research administrators can effectively train others. However, training is an emerging competency for Nora, Eliza, and Cynthia, and therefore a job function that needs special attention to improve feelings of competence. Research on both training others and the phenomenon of research administrators being underprepared to train others receives little attention in the literature.

Recommendations for the senior leaders of the SPA team

I developed four recommendations for the senior leaders of the SPA team to increase the SPA team members perceptions of job satisfaction. Self-determination theory suggests that higher perceptions of job satisfaction will enhance the SPA team's job performance, enrich their personal well-being, and decrease turnover intentions. The four recommendations include increasing the frequency and clarity of communications with the SPA team; prioritizing employee retention across the institution; addressing the SPA team's workload; and implementing more effective training programs.

Recommendation 1 – Increase frequency and clarity of communication with the SPA team

Senior leadership should increase the frequency and clarity of their communication with the SPA team. A lack of adequate communication from senior leadership on a variety of issues was the root cause of hindrances to feelings of autonomy and competence. The SPA team want senior leaders to both listen more (to the SPA team's dislike of implementing F&A policies inconsistently or to their concerns about understaffing, for example) and to share more (how and why decisions are made, for example). The findings of this study don't reveal absolute truth that the SPA team's senior leaders weren't listening or didn't take the SPA team's ideas into account; the SPA team merely had that perception, making it subjectively true for the SPA team. In short, senior leaders may actually listen to the SPA team's ideas and concern, but the SPA team isn't aware.

The SPA team needs to feel heard. One first step senior leadership could take would be to ask the SPA team what would make them feel heard to determine where communication should be increased or modified. If senior leaders are listening to input, they need to demonstrate what resulted from the team's suggestions. Senior leaders should communicate what they heard and what action they took based on what they heard. Even if they can't act on a suggestion or concern, senior leadership should communicate that and explain why not. The SPA team acknowledged that senior leadership wouldn't enact their every idea or take action on every suggestion. However, the SPA team want to know that their input has at least some contribution to senior leadership's actions. With a more transparent flow of communication and information, senior leaders can make the SPA team feel heard.

Recommendation 2 – Prioritize employee retention across the institution

Senior leadership should prioritize employee retention. The impacts of employee turnover are not just confined to the costs of hiring the employee's replacement and the loss of institutional knowledge. The employee's departure ripples outward: employees feel more related to employees with a longer tenure at the institution. Therefore, employee turnover negatively affects the feelings of relatedness that employees left behind experience when colleagues with a long tenure leave the institution. The institution needs to retain research administrators (and staff members more broadly) who not only contribute valuable institutional knowledge, but also increase feelings of relatedness amongst their colleagues. Contrarily, the team's feelings of relatedness suffered when the team was understaffed. Retaining employees helps their colleagues feel more related, but losing employees makes their colleagues feel less related. This direct relation reveals the importance of employee retention.

In particular, retention of effective managers should be a high priority because they have such a powerful impact on their team. The SPA team manager made her team feel trusted and supported, which led her team to experience strong feelings of autonomy and relatedness, respectively. The SPA team's manager was a critical part of participants' job satisfaction and more importantly, a pivotal reason for why employees stayed on the team. Nora admitted that if her manager were to leave, she would also look for a new job. One critical first step for retaining valuable employees is addressing an untenable workload.

Recommendation 3 – Address the SPA team's workload

Unless addressed, high workload and frequent turnover intensify and aggravate each other: turnover requires remaining team members to pick up the slack, increasing workload, while an increasing workload encourages employee to leave the institution because they are overworked. The SPA team's feelings of relatedness suffered when the team was understaffed, which means that turnover also has a negative effect on workload for remaining employees.

There are two tactics by which the SPA team workload could be reduced. The most obvious is to hire more team members. However, to say that a team should be given more employees may be overly simplistic, as budget constraints always exist. However, if team members report that they are overworked and an internal audit indicates that the team is understaffed, the necessity of allocating more resources in the form of additional staff to address an unsustainable workload is undeniable.

If the allocation of the additional staffing resources is impossible, another tactic is to evaluate the SPA team's current services, responsibilities, and tasks. With an accurate understanding of the current workload, senior leaders should engage in a discussion with the SPA team to find consensus on which responsibilities the team should prioritize and which should be eliminated from the workload. If the SPA team's work priorities are not aligned with senior leadership's vision, the SPA team may be focusing on tasks that aren't as highly valued. A shared understanding of the most important work will allow the SPA team to re-focus their time and attention on high-priority job functions.

Recommendation 4 – Implement more effective training programs

Senior leaders should evaluate how knowledge transfer happens in their research administration and how the knowledge transfer process could be completed with less time, less trepidation, and better results. The SPA team feels a high level of competence in most tasks, but a strikingly low level of competence in training others. Therefore, training is not only one area in which feels of competence suffer, but also it suggests that the knowledge transfer of research administration skills and knowledge to train others is not effective or efficient.

Strategies include developing a training protocol or best practices guide. Furthermore, hiring a designated research administration trainer or developing an existing team member with the skills to train others would be helpful. As the team grows concomitantly with the institution's research volume, the necessity to train others will only grow more frequent and pressing. These findings indicate that training others is a required competency and should be treated as such, with opportunities for a team member to develop training skills if they do not feel adequately competent in the task. Similarly, senior leaders should evaluate how to implement more accessible professional development opportunities. This would allow research administrators to keep pace with an ever-evolving field, helping to ensure that their feelings of competency don't erode over time as the field changes around them.

Implications for Practice

Although the program evaluation was specific to Sponsored Programs Administration (SPA) team in the Office of Research & Sponsored Programs (ORSP) at the University of Denver, practical implications may be gleaned from this program evaluation for the field of research administration and for the field higher education more broadly. Because this evaluation was framed with the theoretical framework of self-determination theory, a broad framework for the study of human motivation, these implications are aimed at senior leaders in institutes of higher education that oversee research administration units.

The findings of the study reveal significant implications for the ability of R1 institutions to support research and scholarship when research administration staffing resources are insufficient. Especially for R1 institutions looking to increase their research volume, maintaining research administration staffing levels that keep pace with the growth of research expenditures is paramount. If an institution does not allocate adequate staffing resources to support the current (or future) level of research, research administrators shoulder the burden as they increasingly try to accomplish more with less. While some employees may grind through a heavy workload and tolerate the resultant decline in productivity and personal well-being, other employees will be driven to leave by a heavy workload. The likelihood of employees looking to leave the institution is compounded by a lack of communication from senior leaders and by a lack of adequate training resources. If employees do not experience autonomy, relatedness, and competence in their work, they will leave the institution.

Furthermore, research administration staffing concerns reverberate across the institution. With such a heavy reliance on on-the-job training and a lack of adequate training resources, research administration leaders rely on a critical mass of experienced teammates who can impart knowledge to new hires. If the team members the institution relies on for training were to leave the institution, the next additions to the team will struggle to acquire the necessary research administration expertise and institutional knowledge, affecting the productivity of the entire team. Similarly, understaffed teams and undertrained team members may make more errors in their work, which could lead to financial, legal, or reputational consequences for the institution. Finally, gaps in research administration support have far-reaching consequences for faculty productivity. Without the staffing support to handle the administrative work of research, faculty are forced to allocate time to this work that might otherwise be spent on scholarship, teaching, or service.

Recommendations for Future Research

Because the scholarship in the field of research administration is still in relative nascency, opportunities for future research abound. The findings illustrated that the SPA team by communicates with and supports department administrators in academic units. Furthermore, the tenure of colleagues across the institution, including department administrators, supported participants' feelings of relatedness. Within the single general qualitative inquiry model, the scope of the inquiry could be expanded at the institution to include department administrators. This would broaden the insights of the perspectives captured to all stakeholders engaged in research administration on campus, rather than the narrower approach of focusing on a single team.

This general qualitative inquiry approach not only bounded the evaluation to a single team of individuals, but also to a single period of time. The SPA team was experiencing a period of recent turnover and subsequent understaffing, and findings revealed that the workloads were high and feelings of relatedness were eroding. A longitudinal study could examine the SPA team over time to explore any changes in the nature of the work or perceptions of job satisfaction that occur as the team hires and trains new team members. This would help to confirm if a heavy workload and perceptions of decreased relatedness were a symptom of temporary high turnover, or if other factors, like the transition to the designation as an R1 university, also contributed.

As noted in the discussion on the physical environment, this study did not find consensus on how the physical environment affected participants' feelings of autonomy and relatedness, or if working as a hybrid employee or a fully remote employee influenced those feelings. Further studies could explore how the physical environment of the work affects research administrators to better understand how remote work options promote (or hinder) their job satisfaction.

All of the participants in this study were women. This offered a unique opportunity to highlight the perspectives of female university research administrators, but it precludes in-depth insight on how gender may affect research administrators' perceptions. For instance, participants reported a desire for senior leadership to listen more to their ideas and concerns, and one of the senior leaders was a male. Male research administrators may not care as much about being listened to and thus may experience the same amount of attention as an acceptable amount of senior leadership listening to them. This might point to gender differences in wanting to feel heard, or it might suggest that male senior leaders don't listen as much to female administrators. Future research could examine how gender affects a research administrator's experiences and perspectives. Furthermore, gender is only one social identity element in play in this study. Other social identity elements, such as age, race, ethnicity, socioeconomic status, sexual orientation, ability, religion and spirituality, and nationality, could also be explored to better understand how social identities (and their intersectionalities) affect research administrators' perceptions of job satisfaction.

This study was conducted at a private institution of higher education that was recently designated as a Research 1 (R1) university within a central research administration office that has combined pre- and post-award functions. Similar studies could be conducted at other institutional types, such as public institutions of higher education or predominately undergraduate institutions (PUIs), or within central research administration offices that bifurcate the pre- and post-award functions. Furthermore, research administration is not limited to a university setting; similar studies could be conducted at research institutes or hospitals. This would help elucidate if the findings are particular to an institutional type or if they can be more broadly generalized across institutions.

This study was a general qualitative inquiry generating an in-depth understanding of a central research administration team. Therefore, the findings are not considered generalizable, as the boundaries of the inquiry limited the evaluation to a single research administration team at one university. While the findings point to several implications to enhance positive elements that lead to job satisfaction and mitigate negative elements that hinder it, the implications are only directly relevant to a single institution. In future studies, a mixed-methods approach that supplemented similarly rich information with quantitative measures of employee satisfaction and institutional performance would expand and strengthen the implications of this evaluation with a broader application to more than one institution.

References

Adom, D., Yeboah, A., & Ankrah, A. K. (2016). Constructivism Philosophical Paradigm: Implication for Research, teaching and Learning. *Global Journal of Arts Humanities and Social Sciences*, *4*(10), 1–9.

Allen-Collinson, J. (2007). 'Get yourself some nice, neat, matching box files!' Research administrators and occupational identity work. *Studies in Higher Education*, *32*(3), 295–309. https://doi.org/10.1080/03075070701346832

Allen-Collinson, J. (2009). Negative 'marking'? University research administrators and the contestation of moral exclusion. *Studies in Higher Education*, *34*(8), 941–954. https://doi.org/10.1080/03075070902755641

Azanza, G., Moriano, J. A., Molero, F., & Lévy Mangin, J.-P. (2015). The effects of authentic leadership on turnover intention. *Leadership & Organization Development Journal*, *36*(8), 955–971. https://doi.org/10.1108/LODJ-03-2014-0056

Bin Schmailan, A. S. (2016). The relationship between job satisfaction, job performance, and employee engagement. *Issues in Business Management and Economics*, *4*(1), 1–8.

Broeck, A., Vansteenkiste, M., Witte, H., Soenens, B., & Lens, W. (2010). Capturing autonomy, competence, and relatedness at work: Construction and initial validation of the Work-related Basic Need Satisfaction scale. *Journal of Occupational and Organizational Psychology*, *83*(4), 981–1002. https://doi.org/10.1348/096317909X481382

Buckley, P. J., Chapman, M., Clegg, J., & Gajewska-De Mattos, H. (2014). A Linguistic and Philosophical Analysis of Emic and Etic and their Use in International Business Research. *Management International Review*, *54*(3), 307–324. https://doi.org/10.1007/s11575-013-0193-0

Carnegie Classifications. (2023). Carnegie Foundation for the Advancement of Teaching. https://carnegieclassifications.acenet.edu/carnegie-classification/

Cole, S. S. (2007). Research Administration as a Living System. *Journal of Research Administration*, *38*(2), 14–27.

Collaboration for the Public Good. (2023). University of Denver. https://impact.du.edu/implementation-team/collaboration-for-the-public-good/

Couch, V. (2019). *2019 Staff Climate Survey* (pp. 1–3). The Higher Education Research Institute.

Couch, V. (2021). *2020 Staff Climate Survey, Pre-Print Research Brief* (pp. 1–6). The Higher Education Research Institute.

Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-Determination Theory in Work Organizations: The State of a Science. *Annual Review of Organizational Psychology and Organizational Behavior*, *4*(1), 19–43. https://doi.org/10.1146/annurev-orgpsych-032516-113108

Deci, E. L., & Ryan, R. M. (2000). The “What” and “Why” of Goal Pursuits: Human Needs and the Self-Determination of Behavior. *Psychological Inquiry*, *11*(4), 227–268. https://doi.org/10.1207/S15327965PLI1104_01

Deeter, C., Hannah, D., Reyes, C., Mack, M. E., Stroo, M., Freel, S. A., Brouwer, R. J. N., Gaudaur, H. E., Doughty, A. L., & Snyder, D. C. (2020). Professional

Development for Clinical Research Professionals: Implementation of a Competency-Based Assessment Model. *The Journal of Research Administration*, *51*(2), 15–40.

Deitz, C. L. (2011). *Information Behaviors in Higher Education Research Administration: Support for Collaborative Proposal Development Activities*. Syracuse University.

Derrick, G., & Nickson, A. (2014). Invisible Intermediaries: A Systematic Review into The Role of Research Management in University and Institutional Research Processes. *Journal of Research Administration*, *45*(2), 11–45.

Figueroa, O. (2015). The Influences Impacting Staff Turnover in Higher Education. *Journal of Management and Sustainability*, *5*(4), 86–93. https://doi.org/10.5539/jms.v5n4p86

Flynn, F. J., & Lide, C. R. (2022). Communication Miscalibration: The Price Leaders Pay for Not Sharing Enough. *Academy of Management Journal*, amj.2021.0245. https://doi.org/10.5465/amj.2021.0245

Gagné, M., & Deci, E. L. (2005). Self-determination theory and work motivation. *Journal of Organizational Behavior*, *26*, 32.

Guzzo, R. A., Nalbantian, H. R., & Anderson, N. L. (2023, January 24). Don't Underestimate the Value of Employee Tenure. *Harvard Business Review*.

Haefner, J., & Clark, M. (2022). *DU Achieves R-1 Status; Invests in Teaching and Research*. https://www.du.edu/news/du-achieves-r-1-status-invests-teaching-and-research

Hirsch, P. B. (2021). The Great Discontent. *Journal of Business Strategy*, *42*(6), 439–442. https://doi.org/10.1108/JBS-08-2021-0141

Issah, M. (2021). Perception of Fit and Job Satisfaction Among Administrative Staff in a Mid-Western University in the United States of America. *SAGE Open*, *11*(2), 1–10. https://doi.org/10.1177/21582440211027564

Jo, V. H. (2008). Voluntary turnover and women administrators in higher education. *Higher Education*, *56*(5), 565–582. https://doi.org/10.1007/s10734-008-9111-y

Johnson, M. R., & Bullard, A. J. (2020). Creation of a Structured Performance-Based Assessment Tool in a Clinical Research Center Setting. *The Journal of Research Administration*, *51*(1), 17.

Kaplan, N. (1959). The Role of the Research Administrator. *Administrative Science Quarterly*, *4*(1), 20–42. https://doi.org/10.2307/2390647

Kerridge, S., & Scott, S. F. (2018). Research Administration around the World. *Research Management Review*, *23*(1), 1–34.

Knight, W. E., & Leimer, C. L. (2010). Will IR Staff Stick? An Exploration of Institutional Researchers' Intention to Remain in or Leave Their Jobs. *Research in Higher Education*, *51*(2), 109–131. https://doi.org/10.1007/s11162-009-9152-9

Koys, D. J. (2001). The Effects of Employee Satisfaction, Organizational Citizenship Behavior, And Turnover on Organizational Effectiveness: A Unit-level, Longitudinal Study. *Personnel Psychology*, *54*(1), 101–114. https://doi.org/10.1111/j.1744-6570.2001.tb00087.x

Kulakowski, E. C., & Chronister, L. U. (2011). *Research administration and management*. Jones & Bartlett Learning.

Kuzior, A., Kettler, K., & Rąb, Ł. (2022). Great Resignation—Ethical, Cultural, Relational, and Personal Dimensions of Generation Y and Z Employees' Engagement. *Sustainability*, *14*(11), 1–9. https://doi.org/10.3390/su14116764

Kvale, S. (2007). *Doing Interviews*. SAGE Publications, Inc.

Langley, D., & Heinze, K. (2009). Restructuring research support offices: Commentary based on experience at two organisations. *Perspectives: Policy and Practice in Higher Education*, *13*(2), 37–41. https://doi.org/10.1080/13603100902805409

Leyland, B., Jackson, G., Godard, K., Taggart, K., Nalevanko, A., & Capor, R. (2020). Structuring a Departmental Research Administration Office to Combat a High-Demand Workload and Offset Administrative Burden. *Research Management Review*, *24*(1), 1–11.

Linneberg, M. S., & Korsgaard, S. (2019). Coding qualitative data: A synthesis guiding the novice. *Qualitative Research Journal*, *19*(3), 259–270. https://doi.org/10.1108/QRJ-12-2018-0012

Marina, S., Davis-Hamilton, Z., & Charmanski, K. E. (2015). Evaluating Research Administration: Methods and Utility. *The Journal of Research Administration*, *46*(2), 95–114.

Martin, E. (2022). *2021 Staff Climate Survey, Pre-Print Research Brief* (pp. 1–7). The Higher Education Research Institute.

Martin, P. S. (2021). *Critical Evaluation of Customer Service in a Pre-Award Research Administration Office of a Nonprofit Academic Research Institution*. Wilmington University.

Medina, M. R. (2021). Authentic Leadership: A Study of the Relationship between Authentic Leadership and Organizational Citizenship Behavior among Research Administrators at Research Universities. *Research Management Review*, *25*(1), 71–91.

Merriam, S. B., & Tisdell, E. J. (2015). *Qualitative research: A guide to design and implementation* (4th edition). John Wiley & Sons.

Meyer, M. (2023). *DU Grant Funding Soars Thanks to Faculty Efforts, Improved Infrastructure and R1 Status*. University of Denver. https://www.du.edu/news/du-grant-funding-soars-thanks-faculty-efforts-improved-infrastructure-and-r1-status

Mission and programs. (2022). National Renewable Energy Laboratory. https://www.childrenscolorado.org/research-innovation/

Mission, Vision, & Values. (2023). University of Denver. https://www.du.edu/about/mission-vision-values

Moody, J. (2022, July 21). Higher Ed Hiring Woes. *Inside Higher Ed*. https://www.insidehighered.com/news/2022/07/21/hiring-woes-loom-large-business-officers-conference

Moody, J.. (2022, July 22). More than Half of Higher Ed Workers Plan to Leave. *Inside Higher Ed*. https://www.insidehighered.com/quicktakes/2022/07/22/survey-more-half-higher-ed-workers-plan-leave

Mostowlansky, T., & Rota, A. (2020). Emic and Etic. *Cambridge Encyclopedia of Anthropology*. https://doi.org/10.29164/20emicetic

Mullen, C. A. (2009). Re-Imagining the Human Dimension of Mentoring: A Framework for Research Administration and the Academy. *Journal of Research Administration*, *40*(1), 10–31.

Nagel, T. (1986). *The View From Nowhere*. Oxford University Press.

Nguyen, H. T. L., & Van Gramberg, B. (2018). University strategic research planning: A key to reforming university research in Vietnam? *Studies in Higher Education*, *43*(12), 2130–2147. https://doi.org/10.1080/03075079.2017.1313218

Nietzel, M. T. (2021). *Movin' On Up: Nine Universities Climb To Highest Carnegie Classification In 2021*. https://www.forbes.com/sites/michaeltnietzel/2021/12/21/movin-on-up-nine-universities-climb-to-highest-carnegie-classification/?sh=50012b6f4d8b

Oakley, A. (1981). *Interviewing women: A contradiction in terms* (H. T. Roberts, Ed.). Routledge Kegan Paul.

Okonji, P. E., Okiki, O. C., Idowu, I. A., & Alo, B. I. (2018). Assessing University Research Governance Practices and Structures in Developing Countries: *Research Management Review*, *23*(1), 1–10.

Pushpakumari, M. D. (2008). *The Impact of Job Satisfaction on Job Performance: An Empirical Analysis*. 18.

Reardon, S. (2021). Academics weary of the tenure grind could excel as research administrators. *Nature*, *595*, 321–322.

Reed, R. (2021). Higher Education Administrator Turnover: An Examination of Situational Leadership Styles. *College & University*, *96*(1), 2–15.

Research & Scholarship Annual Report, FY22. (2022). University of Denver.

Research and innovation. (2022). Children's Hospital Colorado. https://www.childrenscolorado.org/research-innovation/

Research Overview. (2023). University of Denver. https://www.du.edu/research/overview

Roundtree, A. K. (2021). Years of Innovation and Change: Reflections from the Editorial Board and Insights from RMR Journal Content. *Research Management Review*, *25*(1), 92–101.

Schaller-Demers, D. S. (2015). Responsible Conduct of Research: Not Just for Researchers. *The Journal of Research Administration*, *46*(1), 63–76.

Schools & Colleges. (2022). University of Denver. https://www.du.edu/academics/schools-colleges

Serenko, A. (2022). The Great Resignation: The great knowledge exodus or the onset of the Great Knowledge Revolution? *Journal of Knowledge Management*. https://doi.org/10.1108/JKM-12-2021-0920

Shambrook, J. (2010). *Health Behavior, Occupational Stress, and Stress Resiliency in Research Administrators Working in the Academic Environment*. Walden University.

Shambrook, J. (2012). Comparison of Stress-Related Factors in the 2007 and 2010 Research Administrator Stress Perception Surveys (RASPerS). *Journal of Research Administration*, *43*(2), 107–118.

Shambrook, J. (2013). Comparison of Stress-Related Factors in the 2007 and 2010 Research Administrator Stress Perception Surveys (RASPerS). *Journal of Research Administration*, *43*(2), 107–118.

Shambrook, J., & Roberts, T. J. (2011). 2010 Profile of a Research Administrator. *Research Management Review*, *18*(1), 19–30.

Shelley, L. (2010). Research Managers Uncovered: Changing Roles and 'Shifting Arenas' in the Academy. *Higher Education Quarterly*, *64*(1), 41–64. https://doi.org/10.1111/j.1468-2273.2009.00429.x

Slocum, J. M., Chronister, L., Landen, M., Kiel, C., McCormick, K., Miller, P., Sikalis, A., & Spaulding, A. (2010). Women as Senior Research Administration Managers. *Journal of Research Administration*, *41*(3), 127–139.

Spencer, T., & Scott, J. (2017). Research Administrative Burden: A Qualitative Study of Local Variations and Relational Effects. *Research Management Review*, *22*(1), 1–29.

Stone, J. (2021, December 20). University of Denver Joins List of Highest Level of Research Institutions in the United States. *University of Denver*. https://www.du.edu/news/university-denver-joins-list-highest-level-research-institutions-united-states

Sull, D., Sull, C., & Zweig, B. (2022). Toxic Culture Is Driving the Great Resignation. *MIT Sloan Management Review*.

Tabakakis, K., Sloane, K., Besch, J., & Quyen, G. T. (2020). Burnout and Its Correlates in Research Administrators. *Research Management Review*, *24*(1), 1–21.

Walker, S. K. (2017). *Retention Strategies for Reducing Voluntary Turnover in a Higher Education Institution*. Walden University.

Welch, L., & Brantmeier, N. K. (2019). Examining Employee Retention and Motivation Trends in Research Administration. *Journal of Research Administration*, *52*(2), 70–86.

Williamson, C., Dyason, K., & Jackson, J. (2020). Scaling up Professionalization of Research Management in Southern Africa. *The Journal of Research Administration*, *51*(1), 46–72.

Zahneis, M. (2023, March 31). Higher Ed's Hiring Challenges Are Getting Worse. *The Chronicle of Higher Education*. https://www.chronicle.com/article/higher-eds-hiring-challenges-are-getting-worse

Zink, H. R. (2018). Department-Centered Research Administration: Building a General Research Administrative Support Program (GRASP). *Research Management Review*, *23*(1), 1–16.