THE ROLE OF PROJECT MANAGEMENT IN SPONSORED RESEARCH

by

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Abstract

Project management provides guidance, direction, and tools for projects ranging in scope and complexity. The role of applying project management principles to sponsored research planning is a crucial factor in the success of most research, as well as an effective method to remain within the scope, schedule, and budget of the project. Project management techniques may be allusively applied to research as informal practice by the Principal Investigators (PI), rather than a Project Manager (PM). It is critical to understand that project management principles may not be applicable to all research ventures as the ambiguity and undefined goals surrounding some research are not conducive to the practices and procedures of project management.

This study evaluates the role of project management in research through an in-depth literature review, as well as a survey questionnaire to the research community to evaluate to what extent is project management presently applied to research. The evidence gathered shows that project management is currently being applied by research professionals to a great extent for research projects leading to better results, and with better impact on timelines, and budgets. Consequently, researchers face a number of challenges such as administrative burdens, and lack of resources in staffing, capital, and technology. Two principal approaches to implementing a sound research management strategy are flexibility and an analysis of the requirements to identify the best approach. It is found that PIs are mostly taking on this decision, and ultimately driving the research planning, execution, and oversight, as well as
conducting the research and evaluating results. PIs are overburdened, and applying project management principles may help alleviate project planning and execution.

Primary Advisor: Dr. Saiqa Qureshi
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**Glossary**

**Principal Investigator.** The lead scientist on a research project who has a variety of responsibilities related to the planning, execution, and reporting of research findings.¹

**Project Management.** Project management is defined as the systematic process of planning, executing, monitoring, and closing out a project through project lifecycle processes.²

**Sponsored Research.** Research projects supported and/or funded by external organizations. Sponsored research is attributed with additional constraints such as strict deliverables, reporting requirements, and rigorous oversight by the external entity.³


Chapter 1. Introduction

1.1. Background.

Sponsored research is comprised of research projects supported through external organizations either by the external entity providing financial resources, human resources, and/or equipment. Once a Principal Investigator (PI) agrees to proceed with the sponsored research venture, the research team may be required to abide by strict oversight, deliverable requirements, reporting regulations, and overall administrative burden. Project management may provide the tools and structures necessary to assist those involved in sponsored research to conduct a more efficient and effective research project. Project management breaks down a project by first identifying a goal, then implementing a phased approach toward achieving the desired goal.

The phases of project management include (1) Conceptual and Initiation Phase, (2) Definition and Planning Phase, (3) Execution and Monitoring, then (4) Close Out. Furthermore, the foundational objective within project management for tasks involved is the incorporation of S.M.A.R.T. goals, which means that each task and goal are Specific, Measurable, Achievable, Realistic, and within Time.\(^4\) Rolf A. Lundin and Anders Söderholm emphasize in their

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publication, *A Theory of the Temporary Organization*, that each phase is interconnected and consists of a level of engagement from the project manager and team.

![Figure 1: The Four Basic Phases of Project](image)

1.2. Statement of the Problem.

Project management provides a structured approach to managing and executing projects. It is an effective way to reach an intended goal. There are proponents of the project management method in research endeavors, as Professor Paula Jarzabkowski states, “This contingent view of strategizing practices could ultimately be extended through further research to provide more context to strategy-making activities and to produce normative implications.”

Other scholars view project management as a burdensome and restrictive method, especially for sponsored research. Professor Arvi Kuura suggests, “Project-based work can be more engaging and inspiring than routine but concurring specified deadlines and performance

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demands may create stress and require leadership where is less place for ‘soft’ aspects.” An investigation must be made to further evaluate the challenges and benefits of project management for sponsored research.

1.3. Project Question.
Principal Investigators are the leaders forging the path of the research project. Research administrators, graduates, and post-doctorate students provide a great deal of support in executing research tasks. Gathering input and consensus on the role and impact of project management in sponsored research through a survey questionnaire should provide firsthand experiences related to the effectiveness and challenges of project management. An in-depth literature review will also provide key findings on the impact, strategies, and challenges of project management in sponsored research.

1.4. Project Objectives.
   I. Evaluate the role of project management in sponsored research.
   II. Acquire first-hand experiences with project management in sponsored research.
   III. Identify if and how project management benefits sponsored research.

1.5. Significance.
Most research is funded by different organizations, the sponsor can be a range of actors including: governmental, non-for-profits, or for-profit corporations. The government is by far

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the largest contributor to research activities spending about $171 Billion on research and development\(^7\). As a result, taxpayers are ultimately funding many research ventures. \(^8\)

<table>
<thead>
<tr>
<th>By Agency</th>
<th>2020 Actual</th>
<th>2021 Estimate(^2)</th>
<th>2022 Proposed(^7)</th>
<th>Dollar Change 2021 to 2022</th>
<th>Percent Change 2021 to 2022</th>
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<td>1.3 Billion</td>
<td>0.3 Billion</td>
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<tr>
<td>Transportation</td>
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<td>18%</td>
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<tr>
<td>Homeland Security</td>
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<td>0.6 Billion</td>
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<tr>
<td>Environmental Protection Agency</td>
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<tr>
<td>Education</td>
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<tr>
<td>Smithsonian Institution</td>
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<tr>
<td>Other</td>
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<td>0.6 Billion</td>
<td>0.1 Billion</td>
<td>20%</td>
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<tr>
<td>TOTAL</td>
<td>168.6 Billion</td>
<td>167.7 Billion</td>
<td>171.1 Billion</td>
<td>3.4 Billion</td>
<td>2%</td>
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</tbody>
</table>

Table 1: Federal Research and Development Spending \(^5\)

The efficiency and effectiveness of sponsored research ventures are paramount to responsible stewardship of taxpayer funds. A better-managed research project will propel research efforts and promote further innovation and discovery. It is imperative that research is conducted in the most proficient manner which produces innovative deliverables and further encourages greater discoveries. Project management may be an effective method to produce more accountable and transparent research.

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1.6. Exclusions and Limitations.

There will be limitations and exclusions of the many different schools of thought regarding project management due to the unacknowledged practices which ultimately are less consequential to sponsored research. The Project Management Institute (PMI) produced the Project Management Body of Knowledge (PMBOK) Guide in 1987. This document has been adopted by the Institute of Electrical and Electronics Engineers (IEEE), the American National Standards Institute (ANSI), and the International Organization for Standardization (ISO).[^9]

2.1. Overview of literature review.
The literature review conducted has presented strong evidence supporting the application of project management practices to sponsored research. The benefits of project management are significant in setting and maintaining timelines, and budgets, and ultimately achieving goals. There has been an influx in the demand for project management courses in higher education institutions for a variety of complex and high-risk projects.\textsuperscript{10} There is a direct correlation that this demand represents the acknowledgment of the benefits derived from the implementation of project management in private and public entities. The literature review has shown that project management creates value through the success of tangible short-term goals, while simultaneously working on a bigger long-term achievement in some projects.

According to Arvi Kuura, within the past twenty-five years there has been a trend toward the projecification of research, he states, “Project-based work can be more engaging and inspiring than routine but concurring specified deadlines and performance demands may create stress and require leadership where is less place for ‘soft’ aspects.”\textsuperscript{11} However, there are some valid


concerns regarding the constraints that project management principles may apply to projects that are on some level ambiguous in their goal or processes. Some projects may be too ambiguous and high-risk to apply project management principles. Project management tends to be more formal in its process, however maintaining an agile approach, which may not be the most feasible option.

A survey conducted by Rebecca Gründler and Reginald Butterfield showed that quantitative success measures are easier to calculate through project management, but IT organizations are shifting to a more qualitative need for customer satisfaction as a critical success measure. Qualitative outputs are more difficult to manage through these practices. In summation, the application of project management depends on the needs and restrictions of the research venture. The benefit of project management principles, metrics, and phases is evident through the literature review.

2.2. Details of review.

According to the Project Management Institute (PMI), “The initial product may begin as a deliverable of a program or project. Throughout its life cycle, a new program or project may add or improve specific components, attributes, or capabilities that create additional value for

customers and the sponsoring organization. In some instances, a program can encompass the full life cycle of a product or service to manage the benefits and create value for the organization more directly.”

Project management processes work hand and hand to ensure benefit and intended outcome and is applicable to many aspects of an organization or projects.

Figure 2: Sample Product Life Cycle

“In the Standard for Program Management, there are five performance domains:

Program Strategic Alignment, Program Benefits Management, Program Stakeholder Engagement, Program Governance, Program Life Cycle Management.”

Benefits are realized

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14 Ozguler, Ipek. “How to Develop End-To-End Benefits Realization Process through Integrating Portfolio Management with Program and Project Management.” *Project Management*
throughout the stages of the program or project, which more greatly benefits and impact overall organization. The concept of project management is not a novel practice and has consisted of a solid method to identify a plan for the execution of a goal. Project management is a methodical application consisting of S.M.A.R.T. goals, which stand for Specific, Measurable, Achievable, Realistic, and within Time. These S.M.A.R.T. goals are then achieved through a phased process. First, the Conceptual and Initiation Phase, followed by Definition and Planning Phase, then the Execution and Monitoring Phase, and finally Close Out Phase. This method may be applied seamlessly to a research plan in which one begins by analyzing the overall goal and purpose of the project, then closely dissecting the independent tasks of a research project. Furthermore, project management uses an abundance of tools and methods that are proven to drive performance and outcomes through the project cycle, such as a Gantt Chart, project road mapping, risk assessment, task, and resources management tools, etc. There is an extensive list of Key Performance Metrics (KPIs) involved in the project management process which contribute to the active monitoring of the project against the intended end goal. Additionally, the independent tasks may then be managed and monitored to remain on schedule and within budget. Project success is related to achieving goals or deliverables, whereas project management success is “evaluated based on the traditional approach of project triangle cost, time, and budget...(addition to) success as human factors, knowledge transfer, stakeholders,  

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and perception concept, communication, and advanced considerations.” Project management allows for tangible benefits along the project cycle through its incremental approach. Agile project management creates manageable tasks, which are monitored against outcome, schedule, and budget, to then allow the project manager to pivot the project if necessary. Project managers contribute an extensive advantage to a project, not only in managing the basic tasks of projects such as budget, schedule, and performance, but also, they contribute a project manager’s “‘habitus’ (i.e., his or her history, previous experience, education, and even the present and previous family situations).” These attributes allow one to make informed decisions and provide flexible and agile support in constraining circumstances. In other words, not only does project management provide direction, organization, and metrics to a project, but it also provides intuitive strategical direction through a human factor.

2.3. Applicability of Literature Review.

The literature review has provided a foundational understanding of the application of project management principles to sponsored research. The review has expressed increased demand and needs for project management tools on simple to complex scientific ventures, as


well as the diverse application of these tools in multifaceted environments of research.

Throughout the previous research conducted on the applications and role of project management in sponsored research, there seems to be a direct correlation to the importance of these practices in research. Nevertheless, there are some concerns about the possibility of restrictions that project management may produce on sponsored research and inhibit collaboration and customer satisfaction.
3.1. Need(s) Assessment.

Research ventures may at times seem like a scientific adventure, where a scientist leads through inquiry and collaboration. As every scientist understands, research is extremely fragile, and the process may be multi-tiered or have competing requirements which may lead to an unorganized and mismanaged research venture that may fail or contain a great deal of waste in resources and time. Project management has been utilized for decades, but its application to sponsored research is not always acknowledged. Due to the lack of awareness of project management applications and the possible benefits in sponsored research, these principles are at times haphazardly applied to scientific research without clear direction nor intention. There is a need to evaluate if project management is a practice that should be applied to most sponsored research projects, or if it would constrain the scientific flow of innovation when the goals are not always clearly defined. The evaluation will explore if there is a more efficient and effective way to manage sponsored research.

3.1.1 Assessment of Need.

The role and impact of project management in sponsored research will be assessed through an extensive literature review. There are a great deal of publications giving insight into the benefits and restrictions of project management in research. Through evaluation of these publications, in combination with a survey questionnaire of key stakeholders. The questionnaire will provide first-hand quantitative information from research administrators and
scientists on their experiences and application of project management in research. The information gathered from the questionnaire will provide a key understanding of the role and impact of project management in their research.

3.2. Metrics.

The metric used in this assessment will be a quantitative analysis of the survey questionnaire. Each question was written to provide a quantitative evaluation of one's experience in utilizing project management in sponsored research. There may be an assessment that would show if project management were applicable to sponsored research, as well as if there is a positive or negative correlation. Furthermore, it will address if some areas of project management principles or phases are unknowingly being applied to sponsored research. If so, then it may suggest that further training, education, and application of project management would be beneficial and necessary to further one's efficiency and effectiveness, or vice versa. The survey will be distributed through a research administration email list, as well as academic and federal scientific researchers.

3.3 Sources.

The needs were established through meetings with Johns Hopkins University graduate students, research scientists, as well as an experienced professor. There was a need to evaluate the application, role, and impact of project management in sponsored research found through a number of graduate research administration courses, which including key discussions on the applications and benefits of project management to research. Professional experience has also shown that there is a need to investigate whether project management is
advantageous to research through surveying researcher’s past research planning experience.

There is not a clear and defined answer to the best practice in managing research, and thus there needs to be an evaluation to see if there is a more effective and efficient way to research administration.

3.4. Committees.

There was no involvement or discussion with committees, neither in a federal, public, or academic capacity.
Chapter 4: Project Description

4.1. Discussion of project elements.

The project consists of an extensive literature review to gather an understanding of current and relevant project management applications within research planning and its management. The initial research and literature review will consist of searching through a great deal of scholarly reviewed articles using key phrases in search for applicable papers. The key phrases will consist of “Project management in sponsored research”, “Project management and science”, and “Project Management”. It is crucial in this investigation to gather information from recent research on the impact of project management in research in an unbiased approach. This capstone project objectively analyzes the role and impact of project management on research.

In addition, a survey questionnaire is conducted through a mailing list that is distributed to a wide variety of researchers and research administrators. The survey questionnaire is written to quantifiably gauge the current level of engagement one has applied project management in their recent research ventures in an anonymous submission. The survey is intended to evaluate one’s previous research experience and the results of using project management in one’s research, in respect to project management being beneficial or a hindrance to their projects. Overall, the survey consists of twelve questions regarding project management methods used on research projects within the past five years. The survey may prompt discussion or feedback from researchers and research administrators, which in turn would provide enriching information in context for the overall project. The project will provide a greater insight into the
fundamental role and impact of project management in sponsored research through significant literature review, and firsthand accounts from those involved in research. The feedback received by those in the science community will be instrumental to the understanding this impact through experiences and the lessons learned. Once feedback from the survey questionnaire is received it will be evaluated against the information gathered from the literature review to determine if project management has a role within research and the impact.
Chapter 5. Methodology

5.1. Methodology Overview.

The methodology used for this project is an analysis and evaluation of a literature review and a survey questionnaire. The literature review will consist of studying prominent and current scholarly reviewed papers on project management to obtain a foundational understanding on the research previously conducted on project management to understand the benefits and challenges addressed in this area. Thereafter, the survey will be authored based on what the research has provided. The literature review shows that there are benefits, as well as challenges in utilizing project management in research. The survey questionnaire will identify these advantages and gaps through firsthand experiences from professionals in research administration. As represented in the image, the questions will be quantifiable to clearly determine these factors. The survey will be distributed through an email distribution list to a wide variety of research administrators, professionals, and scientists. There is a possibility of project management principles unknowingly being applied to the research process. Consequently, to mitigate this confusion
the questionnaire was written in a manner with frequently used research verbiage that is in actuality a principle of project management. Finally, once the results are gathered then they may be analyzed against the information gathered from the literature review to provide awareness and guidance to the role and impact of project management in the current climate of research. These findings will assist in future strategic pathways to more effective and efficient research.

5.2. Project Design and Discussion.

The project is designed to objectively evaluate the research previously conducted on project management in research. The survey questionnaire builds upon this understanding by gathering information from those involved in research about their experiences utilizing project management principles in their research projects. This will provide current firsthand perspectives of the role and impact project management has had on one’s research project.

5.3. Discussion of Questionnaire.

The questionnaire has very clear instructions that the project is objectively evaluating how project management is used in research. The instructions begin by defining the term ‘project management” so that the subject has an understanding of what the questions are referring to when asking about project management principles. The first question asks if one has utilized any of the key project management tasks within the past five years. The project management tasks are listed out in a manner that is easy to identify for researchers who may not be familiar with project management terminology. Therefore, by wording the question in this manner, it may identify some possibly of usage of project management principles by the unknowing
subject. The second question directly asks if one has implemented project management in their research plan in the past five years to gather an objective and clear answer, with the option to select ‘not sure’. This question, in contrast with the first, will allow one to identify as knowingly using these principles in their research, as well as how many do understand and know about project management principles and their applications. The third question asks if there was a Project Manager (PM) assigned to partner with the Principal Investigator (PI), or if the PI took on the PM role. This question will identify who is implementing project management principles in their research. The fourth question asked about the frequency of applying project management into research to identify if this project is being used and how often. The fifth question distinguishes which stage in their research plan is most critical to apply project management, such as Conception and Initiation, Definition and Planning, Execution, Project Close or Never. The next set of questions has one identifying the outcome of using project management to their research to distinguish if there were benefits or hinderances applied to the project, as well as to what extent, and area that was affected most, such as budget, schedule, or performance. Finally, the final entry on the questionnaire allows for interview requests, as well as an area to provide feedback in anticipation of gathering further response to one’s involvement with project management in research.
Chapter 6. Project Results and Discussion

6.1. Project Result 1.

The survey questionnaire received twenty-seven responses from researchers, as well as research administrators. The results of the questionnaire presented a fascinating insight into how project management affected one’s research. The first question was intended to identify which factors of project management were most commonly used in research, as one may unknowingly be applying project management principles to their research project. The factors listed are key phases used in project management, and the results show that these factors are commonly used in research projects. It was found that there was significant usage of Milestone Schedules (73.1%), Initial Budgeting and Schedule (73.1%), as well as Statement of Work (96.2%). These are key applications of project management factors. Subsequently, when the participants were surveyed on how project management affected the outcome there were significant positive findings. The results show the application of project management principles to research...
produced better-quality outcomes (72.7%), as well as the goal achievement (45.5%).

Moreover, another question examined what the most critical stage was to implement project management to research projects and found that Conception and Initiation was a major stage for application. This initial stage is paramount to organize a project by setting expectations and creating a schedule and budget.

6.2. Project Result 2.

The survey also evaluated the application of project management and found that 55.6% of participants have implemented project management within their research. However, the most interesting find was that 18.5% of participants were not sure. This result presents a gap in the education of the concept and application of project management in the scientific community. Furthermore, to exemplify this inconsistency a subsequent question inquired on the frequency of implementing project management to one’s research, and found that 63% stated Sometimes, 25.9% stated Always, and 11.1% stated Never, which represents deviation from the previous inquiry that did
not know if project management was implemented in their research. Nevertheless, the survey also gauged the impact project management had on research projects, and its significance to the overall research. Interestingly, the results showed that project management was prevalent in a majority of research projects, as well as impactful to the end results.

These results cannot ignore that there was a significant number of participants that gauged their experience below a level three, which cumulative would represent a noteworthy margin.

6.3 Project Result 3.

The survey also gauged if participant believed that project management processed should be implemented for every research venture, and the results presented that a
majority (48%) stated Yes, however a significant number of participants stated Maybe (36%) and No (16%). Notwithstanding, when asked if there were negative impacts due to the lack of project management, a majority at 52% stated Yes, whereas 28% stated Maybe, and 20% stated No. There was also a significant finding that project management provided benefit vastly to research with planning, organization, monitoring, communication, and budgeting. An interesting finding was the critical challenge from the administrative burden and restraining parameters that surrounds project management. These restrictive parameters were exactly what Dr. Joshua Pomeroy, experimental physicist at the National Institute of Standards and Technology (NIST), explained in commentary regarding the survey. Dr. Pomeroy provided an excellent visualization of the challenges researchers face regarding project management principles. He states, “at least in my experience, we apply these principles, but it is often a bit different than if you are building a bridge. At the end of a bridge project, you have a bridge, people are driving on it, it has been tested for strength and safety. In
our case, the metrics are often less tangible, i.e., we want to improve charge sensing bandwidth and sensitivity. We have a vision for what the limitations in current practice may be and conceive of ideas to improve it. We decide on metrics for measuring improvement, and, perhaps, thresholds for success. We figured out what we need to do to implement those ideas and the resources needed to execute that plan. As we go along, I have found that we more often fail to anticipate the problems that really hold up progress, perhaps because we have planned well for the problems we to anticipate? So, I personally tend to try to charge ahead and discover what problems I didn’t plan for, and then adapt plans to address them and adjust goals and efforts…. I think both formal project management and our “logical” approach to our work are rooted in the principles of scientific management that came out of the industrial revolution on the later 1800s and paved the way for things like assembly line manufacturing, etc. But in our case, we need to define milestones and goals a bit more subjectively.”

There were several responses to the survey questionnaire stating that PIs find themselves taking on the role of the Project Manager in developing and implementing strategies such as project planning, execution, etc. PIs are placed in a position in which they must manage a great deal of information, details, and deadlines for the success of a research project. Additionally, depending on the size of the project, multiple PIs may be placed in a position of managing the project.

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Chapter 7. Recommendations and Discussion

7.1. Introduction

Project management provides a sound framework for initiating simple to complex project initiatives by implementing a phased approach to dissect the requirements and goals intended. It is evident that project management provides direction, organization, and oversight to ensure that a project is within scope and budget. Conversely, research is an ever-evolving environment which requires a unique approach depending on its goals due to its sensitivity, risk, and ambiguity. As a result, the application of project management principles to sponsored research should be evaluated and determined by the requirements and goals of the research. The answer to project management’s application to sponsored research is not an absolute solution. This application depends on the specificity of the project and if it can be governed through project management principles. PIs are placed in a position of managing a great deal of competing deadlines and details. Having a single point of contact in project management allows for agility and flexibility in the project management, however, it may contribute to a challenging and overbearing position for the PI. The administrative burden and financial resources may be the greatest deterrent of implementing formal project management office and staff. An anonymous participant noted that there was a lack of return of investment in having a project management team. Alternatively, project management team is attributable to a more effective and efficient way of overseeing a research venture and budget.
7.2. Recommendations

Project management provides a great deal of benefits, and an increased certainty of reaching an intended goal for more projects, however, due to the nature and ambiguity of scientific research, sometimes project management may be a challenge in terms of undefined goals and milestones, inadequate risk management, or poor communication strategies. Furthermore, it is found that applying some factors of project management to a research venture would be beneficial. The recommendation gathered by this study is that one should assess which project management principles would best benefit their specific research, and it is not a one size fits all approach. One must be flexible and agile to pivot their plans to provide the greatest chances for success. For example, during the initiation and conception phase of a research project, one may apply the project management principles to begin mapping out their path toward the intended goal. Creating a project charter, scope of work, and milestone schedule will help provide organization to a project and reduce the risk of failure. Additionally, applying metrics to continually monitor project performance, budget, and schedule may be beneficial to some research ventures, but not feasible to others. Many principal investigators are challenged with the task of providing project management and research efforts to complex projects. Larger projects may benefit from delegating a project manager to a research project which may provide an objective perspective and informed decision-making from strictly a project management principal point of view.

7.2.1. Recommendation 1

Project management undoubtedly provides guidance and direction to complex projects. It allows one to make informed decisions that would provide the greatest potential for success.
However, there is a gap in training and education of project management practices in relation to research. The recommendation gathered from this study is that there needs to be more instruction on the applications and usage of project management for research. Project management is a very comprehensive practice, which varies a great deal depending on the type of project, complexity, and risk involved. Through training and education, one may apply some of the principles, best practices, and tools used in project management to benefit their research. There is a great deal for researchers and research administrators to benefit from simply learning about project management principles and their application to every project.

7.2.2. Recommendation 2

The survey found a grave challenge researchers face when utilizing project management, which is the administrative burden it produces. Researchers must contribute a greater amount of time in an effort to apply project management principles to their research projects. This challenge hinders and negatively affects the scientific community by wasting time and resources, as well as dissuading the use of a proven and effective project management process. The recommendation is to mitigate the administrative burden placed on the shoulders of researchers by either providing the tools and software that ease project management. These tools and software are easy to navigate and use. An upfront investment may produce cost and resource-saving methods for research planning. Organizations should implement Project Management Offices as a supportive resource to those scientists who feel the need for assistance. Moreover, the recruitment of more project managers to oversee research ventures will prove to alleviate the administrative burden researchers face. An expert in project management would provide a partnership with a researcher to guide the project toward its
intended goal, as well as provide helpful recommendations through experiences and
knowledge. Sponsored research would prosper with collaboration and partnership between
researchers and project managers.
Chapter 8: Conclusion

Research planning, monitoring and execution may benefit substantially by the application of project management principles. Researchers must have the flexibility to adapt project management principles as they feel necessary or deviate when the strict guidelines of project management will hinder the success of the research project. In other words, there must be an agile and flexible approach to research which allows one to apply some aspect of project management principles as fits the needs and requirements of the research venture. Researchers should not be pigeonholed onto the project management guardrails. The Agile Project Management approach is when one incrementally plans their project toward a short-term defined goal. Agile Project Management may be an applicable solution to research which involves vague and ambiguous goals and does not align to a normative project which has a start and finish. Forbes defines the Agile approach as, “Agile is an iterative, introspective, and adaptive project management methodology. In an Agile practice, a project is broken up into sub-projects. These are typically referred to as sprints. At the end of each sprint, stakeholders and the team review their work, make adjustments for the next sprint, and repeat until complete.”"\(^\text{18}\) A PI will need to evaluate and proceed with the application principles and factors of project management that best fits their need and their goal. The role of project

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management in sponsored research is evident, whether managed by a Principal Investigator or a Project Manager, research ventures all have a level of project management principles in place. Project management provides an abundance of advantages such as research planning, organization, monitoring, communication, budgeting, and reporting to a research project. Its application is widely adaptable to project ventures. The benefits of project management principles supersede the administrative challenges, which may be mitigated through training, tools, or project management professionals. Now that we are charged with evaluating and analyzing current research practices and procedures to further innovate them to be further efficient and effective to successfully achieve intended goals.
The Role of Project Management in Sponsored Research

The questionnaire is to investigate the role and impact of project management in sponsored research. Project management is defined as the systematic process of planning, executing, monitoring, and closing out a project through project lifecycle processes. There are requirements laid out when utilizing project management, which helps develop a project toward an intended goal. The goal of this questionnaire is to evaluate if the traits of project management are used in sponsored research. Also, would applying project management to sponsored research help or hinder the research venture. Please take a few minutes to provide your experience. “By completing this survey or questionnaire, you are consenting to be in this research study. Your participation is voluntary and you can stop at any time.”

In the past five years, which of these have you utilized in your research? Check all that apply:

- [ ] Project charter/plan (Conception & Initiation)
- [ ] Milestone Schedule (Conception & Initiation)
- [ ] Initial Budgeting Detail & Schedule (Conception & Initiation)
- [ ] Resource Requirements List (Conception & Initiation)
- [ ] Procurement Strategy (Conception & Initiation)
- [ ] Statement of Work (Definition & Planning)
- [ ] Work Breakdown Schedule (Definition & Planning)
- [ ] Execution (i.e. Monitoring, tracking, KPIs, quality, forecasts)
- [ ] Project Close (i.e. Final/findings report)

In previous projects within the past five years, has project management been implemented within your research plan?

- [ ] Yes
- [ ] No
If so, was there a Project Manager (PM) assigned to partner with the Principal Investigator (PI) or did the PI take on the PM role as well?

- Yes, there was a PM and PI assigned to a project.
- The PI would take PM responsibility for the project.

How often do you apply project management to your research projects?

- Always
- Sometimes
- Never

When is the most critical stage to include project management to a research project?

- Conception & Initiation
- Definition & Planning
- Execution
- Project Close
- Never
When project management was applied to your project, what was the outcome?

- Reduce Cost
- Increase Cost
- Better Quality Outcome
- Worst Quality Outcome
- Project Completed Ahead of Schedule
- Project Delayed Past Deadline
- Performance or Scope Achieved
- Performance or Scope Missed

In the past five years, about how many project management points of contact were supporting your project from start to finish?

- One
- Multiple (2-3)
- Many (4-5)
- Constantly changing

How prevalent was project management evident in your research project?

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How impactful is project management to sponsored research?

1  2  3  4  5

Not at all  ○  ○  ○  ○  ○  Significantly

Has there been a time where the project was negatively impacted due to the lack of project management?

○ Yes
○ No
○ Maybe

Do you believe project management processes should be implemented for every research venture?

○ Yes
○ No
○ Maybe
What are key benefits or hindrances for applying project management to sponsored research projects?

☐ Planning
☐ Organization
☐ Monitoring
☐ Communication
☐ Budget
☐ Reporting
☐ Too Restraining
☐ Too Costly
☐ Administrative Burden
☐ Too Risky

If you are open to an interview regarding your experience, please provide your email below.

Short answer text
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Biography of the Author

Alexandra Roig Vitali is currently pursuing a master’s degree from Johns Hopkins University in Research Administration with concentrations in the Financial Management of Sponsored Programs and Research Facilitation. Alexandra received a bachelor’s degree from Georgia Southern University in Interdisciplinary Studies with concentrations in Business and Public Administration, as well as a minor in Justice Studies. She previously worked as a Division Office Manager at the National Institute of Standards and Technology (NIST) for three years supporting scientists within the Nanoscale Device Characterization Division. Through her time at NIST, Alexandra has developed and led a number of efforts with leadership to implement efficient and effective policies and procedures, while seamlessly supporting a team of scientists in their research ventures. She has extensive experience in guest researcher agreements, acquisition contracts, and research administration. Most notable was her organization and facilitation of key stakeholder workshops in support of the enactment of the CHIPS Act, which led to a significant congressional strategic report. The exposure to the research process at NIST, as well as studies at Johns Hopkins University, has inspired Alexandra to evaluate and identify connections for further improving and developing the research process.