

10 Reasons for Pre-medical Students to Consider an Internship

by

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This honors thesis is dedicated to my loving husband, Matthew, who has so patiently stood by my side throughout the journey of this project. Further, I would like to dedicate this project to my mother and father, who encouraged me to see this project through and make it to where I am today.

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Abstract

Internships are a critical step to take as an undergraduate student to become competitive for attending a graduate program or finding a career. There are two types of internships, paid and unpaid, which depend on the level of work being done and which field is being studied. It is found that pre-medical students tend to complete internships at a much lower rate than other undergraduates, and the goal of this creative project is to inform students about the benefits of medical internships. For this project, medical school admissions committees across the United States were interviewed to gain their insight on the significance of internships prior to attending medical school. The most significant reported reasoning was to gain exposure in medicine, which was followed by recognizing the intensity of the workplace prior to committing a lifetime to the field.

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Introduction

The process of being accepted into a medical post baccalaureate program is demanding, featuring specific prerequisite classes, personal statements, letters of recommendation, possible exams, and medical experience having an acceptance rate around 41% according to The Princeton Review. Out of all these categories, the most difficult requirement to satisfy is that of firsthand medical experience with patients. Many physician associate (PA) and medical school candidates may try to fill this void by directly working in the healthcare field in entry level jobs. However, many of these positions can lead to working strenuous hours, especially given a college student's weekly workload with classes, assignments, and exams. Alternatively, in an internship, one's hours are capped by the internship requirements, and one's commitment is limited to a semester or one year. A goal of this creative project is to inform students about the benefits of medical internships.

Approximately 60% of undergraduate students complete at least one internship prior to graduation (Milenkovic, 2022). National data on the number of students completing internships in the medical field could not be found in this review. However, the Carlson School of Management Undergraduate Business Career Center found that at the University of Minnesota the most popular industry for internships was financial services, with 19% of the 3,028 internships taking place in that field in 2020-2021. In comparison, 6% of their 3,028 internships in 2020-2021 took place in the healthcare industry (Carlson School of Management, 2021). The New York Times (2017) reported there were 13,061 healthcare internship opportunities posted. This is much lower when compared to business operations which had 58,949 internship opportunities. These

statistics indicate a need to increase internship offerings and placements in the healthcare field for undergraduate students.

A medical internship consists of working alongside professionals anywhere from one month to one year gaining experience and knowledge of the profession in a hands-on learning environment in any desired practice. Because of this, pre-medical students and pre-physician assistant students can obtain direct patient care and research hours, as the students are helping patients under a doctor's supervision. Observing the staff diagnose and treat patients provides students with valuable information that they can apply in the future. Pre-medical students and pre-physician assistant students should remember that by the end of their schooling, they must choose one specialty to work in, and doing so is not an easy choice. Interning in an office of interest may confirm or deny one's desire for a specific field and connect the student to potential future employers within different specialties. In doing so, the final decision of choosing a specialty may be significantly narrowed down. According to the Association of American Medical Colleges (AAMC) Careers in Medicine, The United States has well over 160 specialties to choose from in the medical field such as women's health, general surgery, and dermatology (Specialty Profiles, n.d.).

For students wishing to pursue an internship, it is important to remember that there are both paid and unpaid internships, depending upon the duration of the internship, the work put forward, and the specialty. For example, in a general surgery internship, there are many liabilities with allowing a student to be hands-on-learning, so it would likely be unpaid. An example of liabilities associated with paying students in an internship include a case in which a resident student botched a surgery, and the surgeon

was sued, but because the student was not employed by the hospital, charges were dropped because “employers are liable for harms caused by the negligence of their employees, acting within the scope of employment” (Panique, 2003). However, in a physical therapy clinic, where one can work patients through therapy with slight risks, there is a greater chance of being paid. There are benefits to both types of internships. According to an article regarding unpaid internships, “Employers claim that participation in an unpaid internship specifically is one of the most important factors they consider in their hiring process” (Rothschild, 2020, p. 3). This is because unpaid internships show a person’s passion to learn and a desire to volunteer in different settings to benefit the offices.

Internships do not only benefit the student, though. The employers and offices where interns spend their time share significant advantages. An article regarding how interns benefit offices states: “The students that Fairchild has worked with over the years have been eager to learn, energetic and a valuable enhancement to operations” (Willison, 2012). Because of this young energy and willingness to learn, offices often are presented new ideas to explore. It also opens a door for recruitment once the student has graduated making the management hiring process significantly easier.

Personally, this project is important because I have experience in both paid and unpaid internships, and what I learned in these experiences was valuable. My first internship was an unpaid internship with a dermatology office under the supervision of a Physician Assistant. I was an unpaid intern during the duration of this internship because I did not have any direct responsibility over patients’ care; however, I was able to experience how the Physician Assistants interacted with patients, went about diagnostics,

performed procedures, and handled daily activities. My second internship was a paid internship within a physical therapy clinic. Throughout this internship, I held responsibility over many patients under my own care, but I was still able to watch how the Physical Therapists handled more advanced treatment plans, along with their daily activities and patient interactions. Collectively, the relationships I was able to form with Physician Assistants and Physical Therapists allowed me to gain a deeper understanding of both their careers and their respective fields in which they are employed.

Literature Review

Introduction to Internships

Internship is a term many students have heard. Internships may be done by any student at any age in any area of study, and it allows students to gain first-hand experience in the workplace before committing to the field long term. It is stated that around half of all undergraduate students complete an internship at some point during their degree, but not many of these include students pursuing medicine (University of Wisconsin, 2021).

Within the following literature review, there are many sections. First, there are definitions of terms that must be understood to understand the significance of the project. Also, the definitions allow any terms that may have similar connotations to be differentiated. Following this, theories within literature were explored to determine if sources say internships are significant. Within these sources, there are also common themes, which allowed the generation of the listed 9 reasons these individuals recommend internships.

What is an Internship?

Internships are defined as “a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest” (UMBC, n.d.). Performing an internship provides many opportunities for students such as personal development, career exploration, and the ability to learn new skills in a workplace (Hergert, 2009). A medical internship is an opportunity for students to work alongside healthcare professionals or in a professional healthcare setting such as a hospital, clinic, or research lab (Murtagh, 2023).

Within internships, there are several subcategories that must also be understood. First, it must be recognized that there is a difference in paid and unpaid internships. Paid internships are an opportunity for students to gain field experience, while also achieving some financial goals (Rhodes College, n.d). On the other hand, there are unpaid internships which are defined by the US Department of Labor as being a mutual understanding of a student volunteering their time and labor without compensation (2018). It is also stated that there are boundaries to maintain on the employers’ end so unpaid interns cannot be overworked without pay. Medical internships can be performed in a variety of settings such as research programs, public health departments, nonprofit organizations, and global health projects (Rizal, 2022). To ensure interns are being treated fairly “The Test for Unpaid Interns and Students” states that employers and court members use a “primary beneficiary test” to determine the level of labor being pursued (US Department of Labor, para. 3).

Unpaid internships often get confused with job shadowing. Job shadowing does not involve active work within a field, unlike internships. According to the United Nations, in a shadowing environment, a participant is “visiting” alongside a mentor for a

predetermined amount of time, recognizing and noting their day-to-day work (2015). Job shadowing also allows one to recognize the necessary degree of professionalism to pursue this field to understand if one would be a good candidate within the field. Unpaid interns do shadow mentors, but they also engage in beginner level work to gain first-hand experience within the work field prior to pursuing a secondary degree or career.

Benefits of Internships

Internships are an important work and professional experience for students that should be utilized prior to completion of an undergraduate degree (Maio et al., 2023). Internships are beneficial to the student present day and long term (The College of St. Scholastica, 2018). Within the literature, there are many reasons internships are recommended. The first recommended reason is that internships are proven to improve one's resume, which in turn makes one a stronger applicant for a job or graduate studies program (Montclair State University, n.d.). This is because the student proves they are further interested in the subject, and willing to spend more time than competitors to gain additional experience within the field of interest (International Medical Aid, 2022). Also, this shows medical school programs that the student is serious about a specific field (Buga, 2020).

Second, internships allow one the opportunity to network with employers, which in turn opens a door for a future job as a healthcare provider (Murtagh, 2023). Also, the student may network with other employees within the workplace to gain their insight as to what is necessary for the job, and if they would recommend other experiences prior to working within their field (Montclair State University, n.d.). This is also supported by the Carleton College Career Center, which claims that internships are an opportunity for real

world experiences before beginning a new job or career (n.d.). Further, one may have the opportunity to network with other pre-medical or medical students, which in turn provides the opportunity to gain insight or advice (Buga, 2020).

Additionally, there is a high potential that students who complete an internship will have a higher salary than those who do not complete an internship because they have gained more knowledge, understanding, and experience within the workplace (Galbraith, et al., 2020). Also, internships allow one to expand on the knowledge one may already have from one's courses, which deepens one's understanding (Buga, 2020). More specifically, it is noted that previous knowledge then becomes solidified within the mind after practice (Phillips, 2020). For example, a pre-medical student may have an internship within a medical office but may also find an internship within biomedical sciences which enhances classroom understandings (Harvard Faculty of Arts and Sciences, 2023).

Performing internships helps students develop professional skills, such as time-management, stress-management, maturity, etc., which helps students with personal development and helps make their application stand out (Schnoes, et al., 2018). In doing so, the student is also able to garner an understanding of skills one desires to improve upon (Rizal, 2022). Further, because the medical field is so demanding, burnout is a frequent concern, and having exposure to fields of interest prior to commitment allows students and future healthcare providers to be more mentally prepared (Murtagh, 2023).

Internships help students learn new skills that otherwise may not be taught within an undergraduate degree (Boutsellis, 2018). In doing so, the student is gaining knowledge that are necessary to become a successful healthcare professional in the future (International Medical Aid, 2022). Internships provide experiences in corporate culture,

such as teamwork with co-workers, understanding and listening to those in charge, and having an agenda (University of Northern Iowa, 2022). Internships allow students to recognize personal likes and dislikes, so it is known what should or should not be pursued as a career upon graduation (Ruet, 2020). This also provides the opportunity to explore a variety of interests, such as different fields in healthcare (Murtagh, 2023). Another benefit is that internships increase students' confidence within their field of study, which may increase their drive to work harder (Harvard Faculty of Arts and Sciences, 2023). And finally, internships connect one to mentors who have similar interests to one's own, which allows one to create safe and meaningful relationships before entering the workforce (youth.gov, 2022).

What is not mentioned in the literature is the importance of medical internships. Within all of literature, there are endless broad reports of why students should do internships, but there are not many journal articles about medical internships. Additional research about medical internships would be useful to students, universities, and the profession.

Conclusion

In conclusion, experts in the area across the world recommend that students perform internships during their time as undergraduates. What is unknown is how internships benefit students planning to pursue the medical field. Within the following qualitative study, the idea of medicinal internships is further explored and elaborated upon. Medical school admissions committees across the country were questioned to gain insight as to why they recommend internships, and the responses were carefully organized and analyzed until a list of 10 reasons to consider an internship was created.

Approach/Methods

My thesis includes two notable components. The first portion of this thesis focuses on the need for premedical and pre-physician assistant students to participate in internships with reasonings as to why they are beneficial to the students, their applications, and their future in the medical field. Qualitative research was conducted with medical school admissions committees. Based on their responses to open-ended survey questions, a creative component of this project was completed. Through analysis of the responses provided from the Qualtrics survey, I was able to formulate a top ten recommended reasons for pre-medical students to complete an internship. Each of these components is described in detail below.

Qualtrics Survey and Data Analysis

This project consisted of qualitative research. Admissions advisors at several different medical schools, physician assistant programs, and physical therapy programs, along with pre-medical college advisors and professors at Middle Tennessee State University, were invited to participate in an online survey with open-ended questions. IRB approval was obtained on November 22, 2022, prior to conducting the online interviews (Appendix I). To maintain minimal locational bias, I formatted a list of at least 2 programs per state in the United States of America, shown in Appendix A. The survey was emailed to a total of 102 committees of many unaffiliated medical schools, physician assistant programs, and physical therapy programs, to gather their insight on the following open-ended questions:

1. In what way do you think students who have completed internships before medical school differ from students who have not?

2. What benefits do you think students gain from an internship before applying to medical school?

3. What advice you would give a student completing an internship in a healthcare setting before applying to medical school?

The complete survey can be found in Appendix B. I also contacted pre-medicine advisors and pre-medicine professors at Middle Tennessee State University with the same survey to gather their opinions on whether internships are important for a future in medicine. The recruitment email sent to obtain survey responses can be seen in Appendix C.

This survey ran from May 2023-August 2023 and was scheduled to resend biweekly or until completed, and a total of 20 responses were collected. Analysis of this data was performed in Qualtrics using the “Text iQ” function, which allowed answers to be categorized based on similarities. These answers were then further analyzed allowing percentages of related responses to be calculated as shown in Appendix D-F. These percentages and number of responses allow a top 10 of answers to be selected for the presentation, “Ten Reasons to Consider an Internship.”

Creation of PowerPoint Presentation

For the purposes of educating students about the value and kinds of internships, I created a Microsoft PowerPoint, presentation titled, “Ten Reasons to Consider an Internship” (Appendix G), which can be used within university career centers, freshman undergraduate courses, or posted online. The initial slides of the PowerPoint presentation introduce the idea of an internship, so any audience may understand the purpose of the project. Once introduced, the PowerPoint goes into more detail regarding the 10 reasons students should consider an internship. These 10 reasons were decided based on the

previously analyzed survey results. I presented the findings using the PowerPoint presentation on October 13, 2023, with the Middle Tennessee State University Career Center. Evaluations of this PowerPoint presentation were gathered by presenting it to the Career Center Director and receiving written as well as verbal feedback.

Creation of Public Blog

Along with the Microsoft PowerPoint presentation, a blog post has been created (Appendix H) and posted on the public website Wix:

(<https://gpm2h8.wixsite.com/website/post/10-reasons-to-consider-an-internship>).

This blog post has been evaluated by online responses, such as number of individuals who have read the post or interacted in some way. Engagement of this blog is expected to be higher due to adding 30 tags to draw in more specific audiences. These tags include: internships, workplace, experiences, medicine, diverse, skilled, exposure, thesis, honors, interests, reflection, knowledge is power, practical, genuine interests, desires, volunteering, paid or unpaid, willing to learn, specialties, intentional relationships, letter of recommendation, graduate school, medical school, PA school, career, life goals, achievements, trusting, standing out, and analytical. While this list seems broad, it shares the blog post with anyone having interests in any of these fields. In doing so, my hope is to spread awareness of the importance of internships and why they should be heavily considered prior to graduation.

Results/Discussion

Qualitative Survey Results

The Qualtrics survey ran from May 2023-August 2023 and was resent to the list of programs biweekly or until completion. At the end of the survey timeframe, 20 survey responses were collected, for a response rate of 19.6%.

The first question related to how students with internships differ from those who do not have internships. There were a total of 15 answers, and the responses were analyzed and coded into five themes. These themes include: more exposure to medicine, knowledge of the intensity in medicine or healthcare, gaining real life experiences, provides necessary experience to obtain shadowing and volunteer opportunities and forms intentional relationships with mentors. The second question related to the benefits of performing an internship. There were 14 total answers. The answers were analyzed and coded into five themes: diverse exposure in the workplace, practical experiences, understanding of intensity in medicine, exposure to the field of medicine, and internships solidify the desire to pursue medicine. The third question asked any advice one would provide to those considering performing a medicinal internship, and this had 13 answers. Responses were analyzed and were initially coded into nine themes including: find genuine interests, spend time with Medical Doctors (MD) and Doctors of Osteopathic Medicine (DO), have a willingness to learn, gain shadowing experience along with internship experience, build trusting relationships with mentors, learn to give full attention to the internship, ensure the student interns in multiple specialties to gain as much experience as possible, reflect on the internship, and recognize the challenges that students may face in attempting to pursue an internship.

Further analysis of all responses revealed patterns of responses across questions, and this resulted in the list of five reasons to consider an internship. The list of five was collected based on the entire data set shown in appendix D. The first reason is exposure to medicine, which was mentioned in 36.59% of 41 total responses. One respondent stated, “Any exposure to the physician-patient relationship will be helpful in applying to medical school. Admissions Committee members will expect an applicant to reflect thoughtfully and maturely on the doctor-patient relationship.” Second, was the recognition of the challenge and intensity of going into medicine before committing to the field, which made up 24.39% of 41 total responses. A respondent noted, “The student who has completed an internship should know what they are getting into by going to medical school. Those who have not need to demonstrate their knowledge of the medical profession in other ways.” Third was the willingness to gain experiences in medicine, but also in general workplace environments, such as working as a team, and this made up 19.51% of 41 total responses. A respondent stated, “They have the potential for more lived/real world experience which could broaden their perspective on peoples who are different then themselves, and understand in greater depth the nuances associate with workplace interactions with colleagues, bureaucracy, etc.”

Fourth, is the recognition of finding genuine interests in specific specialties, as well as solidifying the desire to pursue medicine as a career, which made up 9.76% of 41 total responses. A respondent stated, “Students who have completed internships have a general sense of the field they are wanted to get into. It may also help to solidify their desire to pursue medicine.” The final reason from the broad data set was performing other forms of internships or pursuing shadowing opportunities to obtain intentional

relationships with mentors, and this made up 9.76% of the 41 recorded answers. A respondent stated,

Make the most of your experience by developing a trusted relationship with your clinical supervisor. Make sure this individual understands your strengths, areas for improvement, passion, and direction. Through high quality letters of recommendation, you can stand out among the rest of the applicants.

Once the broader data collections are broken into subcategories, there are five more reasons to consider internships, which then provides the full 10 reasons to consider an internship. The first is exposure to diversity in the workplace. Second, is gaining practical knowledge of not just medicine, but in life, such as learning time-management. Third is enhancing previous clinical experiences, emphasizing the physician-patient team, and learning collaboration skills which is critical in the proper diagnostic phases. Fourth is learning professionalism such as manners, being on time, stress management, and adaptability. Finally, internships make you stand out as an applicant, as it shows maturity as a student, but also shows your eagerness to learn.

PowerPoint Presentation

The PowerPoint presentation in Appendix G was presented to the Middle Tennessee Career Center on October 13, 2023. The following is the direct feedback or questions asked after the presentation. First, it was asked what the difference in job shadowing and unpaid internships include. The difference in the two is that job shadowing means being present with staff, but performing no work, but in unpaid internships, one will do some work to gain practical experience. Second, in the presentation, it is stated that internships can be done by any individual in any area of

study, but typically the term “internship” is linked to academia, so what would be a more appropriate term for adult level “internships.” While it is true that typically internships are done by students, it is not true that internships can only be done by students. The term internship is still appropriate at any age but can also be called “career-research,” which is the same process, but phrased differently. Third, the career center wanted to mention that there are many companies looking for free labor, so “know your worth.” If an unpaid internship is being performed and work is being done past a beginner level, recognize your efforts and request a paid internship for your time and labor.

Fourth, it was asked if employers will create internships for students, even if they have not had previous interns. This question was answered by a second faculty member of the career center, and it is stated the typically, internships are not hard to create, and if the student is confident and willing to reach out for an internship, often, employers will create positions for the student. Finally, it was asked if the results of this survey would vary if a fine arts college had been surveyed rather than medical school admissions committees. It is impossible to have definitive proof unless fine arts committees were also interviewed, but it is assumed that the top reasons of the importance of internships would remain, but their ranking of importance may vary. For example, the second most important reason to medical admissions is understanding the intensity of medicine, but fine arts may care more about the solidification of the desire to pursue a graduate degree.

Wix Blog

The Wix Blog found in Appendix H was created using the qualitative survey data. The blog was officially posted on October 9, 2023, and within 24 hours, had obtained over 60 views, and 18 individuals read the blog entirely. As of October 30, 2023, the blog

has 115 views and 50 individuals have read the blog entirely. Wix analytics reveals that the post is not only being seen in the United States of America but also in Germany. There have not been any comments or further data regarding the blog, but it has reached a wide audience and continues trending upwards.

Conclusion

The project “Ten Reasons to Consider a Pre-medical Internship” has many segments, which all come together in efforts to achieve one goal, which is to spread awareness of the significance of internships to undergraduate students prior to applying to medical school programs. Between collecting and analyzing survey results, it seems as though there is a common trend of why admissions committees recommend internships. This information was outlined in the blog post and PowerPoint presentation. The presentation was presented to the Middle Tennessee State University Career Center and is a source they find to be beneficial to both faculty and students. Because of this, the information from the PowerPoint is going to be consolidated and placed onto the Career Center website. Finally, the blog post interaction increasing on a day-to-day basis brings hope that the goal of this project was achieved, and that students across the world are learning of the importance of medical internships.

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Appendix A

List of Programs Contacted by State

Program	State	Program	State
UAB PA	Alabama	UAB PT	Alabama
UAA	Alaska	Midwestern	Arizona
Univ. of Arizona	Arizona	ACOM	Arkansas
UAMS	Arkansas	USC	California
Stanford	California	University of Colorado	Colorado
University of Colorado	Colorado	Yale	Connecticut
UCONN	Connecticut	Hartford	Connecticut
Delaware Valley	Delaware	University of Delaware	Delaware
FSU	Florida	FAU	Florida
Medical college of Georgia	Georgia	Emory	Georgia
John a Burns	Hawaii	Hawaii Pacific	Hawaii
Idaho Osteopathic	Idaho	Idaho state	Idaho
Rush	Illinois	Chicago	Illinois
Indiana school of medicine	Indiana	Marian	Indiana
University of Iowa	Iowa	Carver college	Iowa
University of Kansas	Kansas	University of Kansas	Kansas
UK	Kentucky	KY-COM	Kentucky
LSU	Louisiana	Tulane	Louisiana
Bates	Maine	Husson	Maine
Johns Hopkins	Maryland	Uniformed services	Maryland
Harvard	Massachusetts	University of Massachusetts	Massachusetts
MSU	Michigan	Western Michigan	Michigan
Bethel	Minnesota	St. Catherine	Minnesota
University of Mississippi	Mississippi	William Carey	Mississippi
MU	Missouri	Washington	Missouri
University of Montana	Montana	University of Montana	Montana
University of Nebraska	Nebraska	Creighton	Nebraska
Las Vegas	Nevada	Touro	Nevada
Dartmouth	New Hampshire	Plymouth	New Hampshire
Rutgers	New Jersey	Rowan	New Jersey

UNM	New Mexico	Burrell	New Mexico
Albert Einstein	New York	New York Medical	New York
UNC	North Carolina	School	North Carolina
UND	North Dakota	Wake Forrest	North Dakota
Ohio state	Ohio	UND	Ohio
University of		Ohio university	
Oklahoma	Oklahoma	Oklahoma state	Oklahoma
Western university	Oregon	Oregon health	Oregon
Philadelphia		sciences	
Osteopathic	Pennsylvania	Geisinger	Pennsylvania
URI	Rhode Island	Warren Alpert	Rhode Island
Medical University	South Carolina	VCOM-Virginia	South Carolina
of South Carolina		University of South	
University of South	South Dakota	Dakota	South Dakota
Dakota	Tennessee	Dell medical school	Texas
ETSU	Tennessee	MTSU	Tennessee
MTSU	Tennessee	LMU	Tennessee
Vanderbilt	Tennessee	Texas A&M	Texas
Belmont	Tennessee	Rocky Vista	Utah
SGU	Utah	University of	
Larner College of	Vermont	Vermont	Vermont
Medicine		Eastern Virginia	
University of	Virginia	Medical School	Virginia
Virginia		Pacific Northwest	
Washington State	Washington	University	Washington
University		West Virginia School	
Marshall University	West Virginia	of Osteopathic	
Joan C. Edwards		Medicine	West Virginia
School of Medicine	Wisconsin	University of	
Medical College of		Wisconsin	Wisconsin
Wisconsin			
University of	Wyoming		
Wyoming			

Appendix B

Informed Consent and Survey

INFORMED CONSENT

Study Title: 10 Reasons to Consider an Internship

Protocol Number: IRB-FY2023-55

Approval Date: April 11, 2023

Principal Investigator: Gracie Johnson

Institution: Middle Tennessee State University

You are being asked to participate in a research project. The following information is provided to inform you about the research project and your participation in it.

1. Purpose of the study: The purpose of this study is to determine whether or not there is a significant advantage or disadvantage of performing an internship as a pre-medical student before applying to medical school, as well as gaining insight on what advise admissions committees at several different medical schools, along with pre-medical college advisors and professors at Middle Tennessee State University and other institutions when completing an internship.

2. Description of procedures to be followed and approximate duration of the study: Participants will respond to a survey which asks their opinion about the disadvantages and advantages of pre-medical students performing an internship before applying to medical school. Information about their role on the admissions committee will also be collected. This consent script only covers surveys conducted online. You will NOT be audio recorded or videotaped in this study. The online survey is through Qualtrics and remains entirely anonymous. The survey duration is approximately 10 minutes.

Here are your rights as a participant:

- a) Your participation in this research is voluntary.
- b) You may skip any item that you don't want to answer, and you may stop the research at any time. Note that if you leave an item blank, you will be warned that you missed one, just in case it was an accident. You can still click that you don't want to answer. Some items may be required to accurately present the study.
- c) There are no risks associated with your participation besides possible discomfort with some of the questions.
- d) There are no real benefits to you from participating besides possibly learning something about the research.
- e) You will NOT be asked to provide any identifiable personal information.
- f) All efforts, within reason, will be made to keep the personal information in your research record private, but total privacy cannot be promised. Your information may be shared with people at MTSU (such as the MTSU Institutional Review Board) or other agencies (such as the Federal Government Office for Human Research Protection) if you or someone else is in danger or if we are required to do so by law.

Contact Information:

If you should have any questions about this research study please contact:

Principal Investigator: Gracie Johnson

Contact Information: 615-636-5284 or gpm2h@mtmail.mtsu.edu

Faculty Advisor: Dianna Rust

Contact Information: 615-898-5325 or dianna.rust@mtsu.edu

For additional information about giving consent or your rights as a participant in this study, please contact the Middle Tennessee State University (MTSU) Office of Compliance at 615-494-8918 or via email at irb_information@mtsu.edu. (<http://www.mtsu.edu/irb>)

If you're ready to get started, please make your choice below before clicking the arrow button.

Thanks again for volunteering your time to this project! I have read the information above. I am at least 18 years old. I believe I understand the purpose, risks, and benefits of the research, and I know what I will be expected to do as a study participant.

I consent to participate

I decline to participate

Are you 18 or older?

Yes

No

Please select your role(s)

Medical School Faculty

Advisor

Staff

Other Faculty

Community member

Other, please explain

Do you serve on an admissions committee?

Yes

No

In what way do you think students who have completed internships before medical school differ from students who have not?

What benefits do you think students gain from an internship before applying to medical school?

Is there any advice you would give a student completing an internship in a healthcare setting before applying to medical school?

Thank you for participating in this study. The purpose of this study is to determine whether there is a significant advantage or disadvantage of performing an internship as a pre-medical student before applying to medical school. If you would like to withdraw your consent at any time, you may do so. Also, if you would like to receive the results of this study, please contact the principal investigator.

Study Title: 10 Reasons to Consider an Internship
Protocol Number: IRB-FY2023-55
Principal Investigator: Gracie Johnson
Contact information: gpm2h@mtmail.mtsu.edu

Appendix C

Recruitment Email

Survey from Middle Tennessee State University Student

To Whom It May Concern:

My name is Gracie Johnson, and I am a biology major with a concentration in physiology, minoring in psychology, and a part of the University Honors college at Middle Tennessee State University in Murfreesboro, Tennessee. Upon graduation, I seek to attend a graduate program to become a Physician Assistant in general surgery, so I have become familiar with the process of applications and making a student competitive in the medicinal field. For my honors thesis, "10 Reasons to Consider an [Internship](#)," I am seeking responses regarding advantages and disadvantages of internships from medical school admissions committees and others who may have practical knowledge for this survey.

Study Description and Purpose: The purpose of this study is to determine whether or not there is a significant advantage or disadvantage of performing an internship as a pre-medical student before applying to medical school, as well as gaining insight on what advise medical school committees may give prospective medical students.

IRB Details:

Study Title: 10 Reasons to Consider an [Internship](#)

Protocol Number: IRB-FY2023-55

Approval Date: April 11, 2023

Principal Investigator: Gracie Johnson

Institution: Middle Tennessee State University

Target Population: We are inviting medical school admissions committees and others who may have practical knowledge to participate in this survey. Participants must be over 18 years of age to participate.

Risks & Benefits: We do not anticipate that you will experience any discomforts from participating in this study beyond those ordinarily encountered in daily life or when performing routine physical or psychological tasks. Although there are no direct benefits to you, we hope that by participating in this project your responses will benefit prospective medical school students. Currently there is little information in the literature about the advantages or disadvantages of participating in an internship for pre-medical students.

Additional Information: Participation in this survey will take approximately 10 minutes. There will be no identifiable data collected, and all submissions are made anonymously and saved on password protected computers. Answers will not save unless submitted, and you are not required

to answer every question for submission. If you should have any questions about this research study, please email the Principal Investigator, Gracie Johnson, or the Faculty Advisor, Dianna Rust. Contact information can be found below.

Contact Information: 615-636-5284 or gpm2h@mtmail.mtsu.edu

Principal Investigator: Gracie Johnson

Contact Information: 615-898-5325 or dianna.rust@mtsu.edu

Faculty Advisor: Dianna Rust

For additional information about your rights as a participant in this study, please contact the Middle Tennessee State University (MTSU) Office of Compliance at 615-494-8918 or via email at irb_information@mtsu.edu. (<http://www.mtsu.edu/irb>)

Concluding Paragraph: Thank you for your time and consideration of this study.

Survey Link: https://mtsu.ca1.qualtrics.com/jfe/form/SV_d0Go6ZUT7k1XU5E

Appendix D

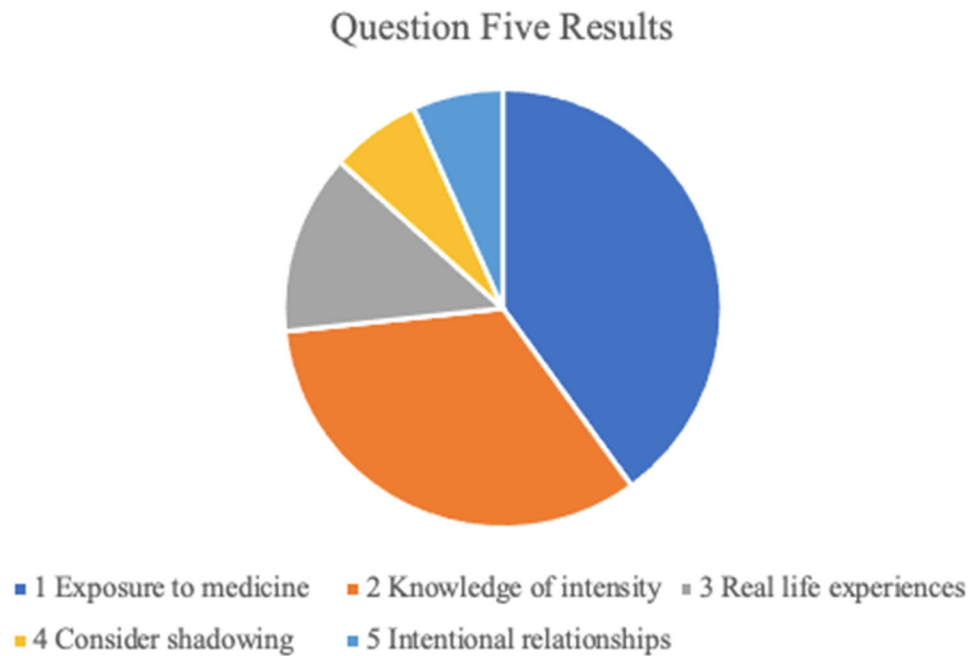
Question 5 Responses and Analysis

Table D1

Survey response analysis

Answer	%	Count (n)
Exposure to medicine.	40.00	6
Knowledge of intensity.	33.33	5
Real life experiences.	13.33	2
Consider shadowing.	6.67	1
Intentional relationships.	6.67	1
Total	100	15

Figure D1



Appendix E

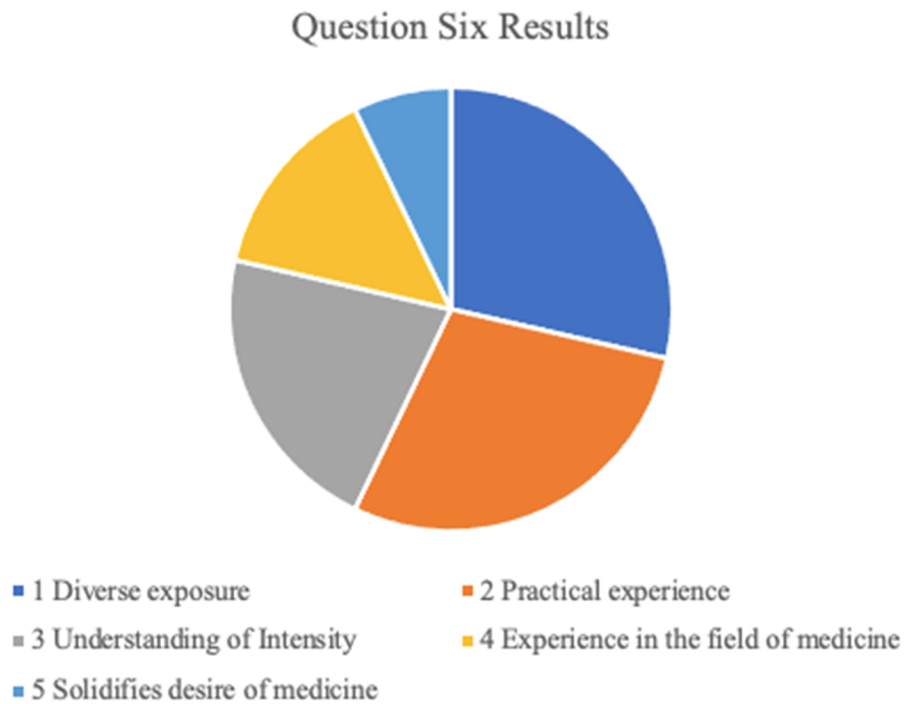
Question 6 Results and Analysis

Table E1

Survey response analysis

Answer	%	Count (n)
Diverse exposure.	28.57	4
Practical experience.	28.57	4
Understanding of Intensity.	21.43	3
Experience in the field of medicine.	14.29	2
Solidifies desire of medicine.	7.14	1
Total	100	14

Figure E1



Appendix F

Question 7 Results and Analysis

Table F1

Survey response analysis

Answers	%	Count (n)
Find genuine interest	11.76%	2
Spend time with multiple specialties	11.76%	2
Have a willingness to learn	11.76%	2
Also do shadowing	5.88%	1
Develop a trusting relationship	11.76%	1
Give all your attention	17.65%	1
Intern in multiple areas	5.88%	1
Reflect on internship	17.65%	1
Challenge to gain intern	5.88%	1

Figure F1



Appendix G

PowerPoint Presentation



The goal of this creative project is to spread awareness of the importance of internships. This project will provide insight as to how to start an internship, why internships should be considered, and where internships can be done, along with the lasting benefits of an internship.

Thesis Statement

10 Reasons to Consider an Internship





What is an “Internship”

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development, and to learn new skills.

What is an internship?. UMBC. (n.d.). <https://careers.umbc.edu/employers/internships/what-is-an-internship/#:~:text=An%20internship%20is%20a%20professional,and%20to%20learn%20new%20skills>.

10 Reasons to Consider an Internship



Who can perform internships?

- Typically, internships are performed by collegiate students in any area of study.
 - Examples: business, psychology, communications, etc.
- Internships can be performed by adults in their careers, as well.
 - Examples: business operations, marketing, sales and operations, etc.

10 Reasons to Consider an Internship



○ Types of internships: Paid vs. Unpaid

- Paid
 - Paid internships are very similar to having a job within the field.
 - Having a paid internship depends on the risk you may cause to the employer.
- Unpaid
 - Unpaid internships are preferred by future employers!
 - By completing an unpaid internship, you are showing genuine interest in the field, and volunteering for their benefits.

As an example, for medicinal internships...

In a surgical setting as an intern, you would not be a paid intern because you are not performing surgeries, but rather you are learning the different aspects of the specialty.

In a physical therapy clinical setting where patient liability is lower, you would likely be a paid intern.

10 Reasons to Consider an Internship



○ Where can you find internships?

- Interns are wanted and needed in every career and field of study.
- The best way to find internships is networking.
 - Ways to do this include, but aren't limited to...
 - Browsing company websites to find like-minded interests.
 - Attending career fairs with a resume or CV, specifically asking if they accept interns.
 - Finding company contacts to call or email to discuss opportunities.
 - Asking career centers for help!

10 Reasons to Consider an Internship





For this project, 102 medical graduate program admissions committees across the US were anonymously interviewed.

The following is the top 10 reasons these committees' recommended internships, by percent.



10 Reasons to Consider an Internship



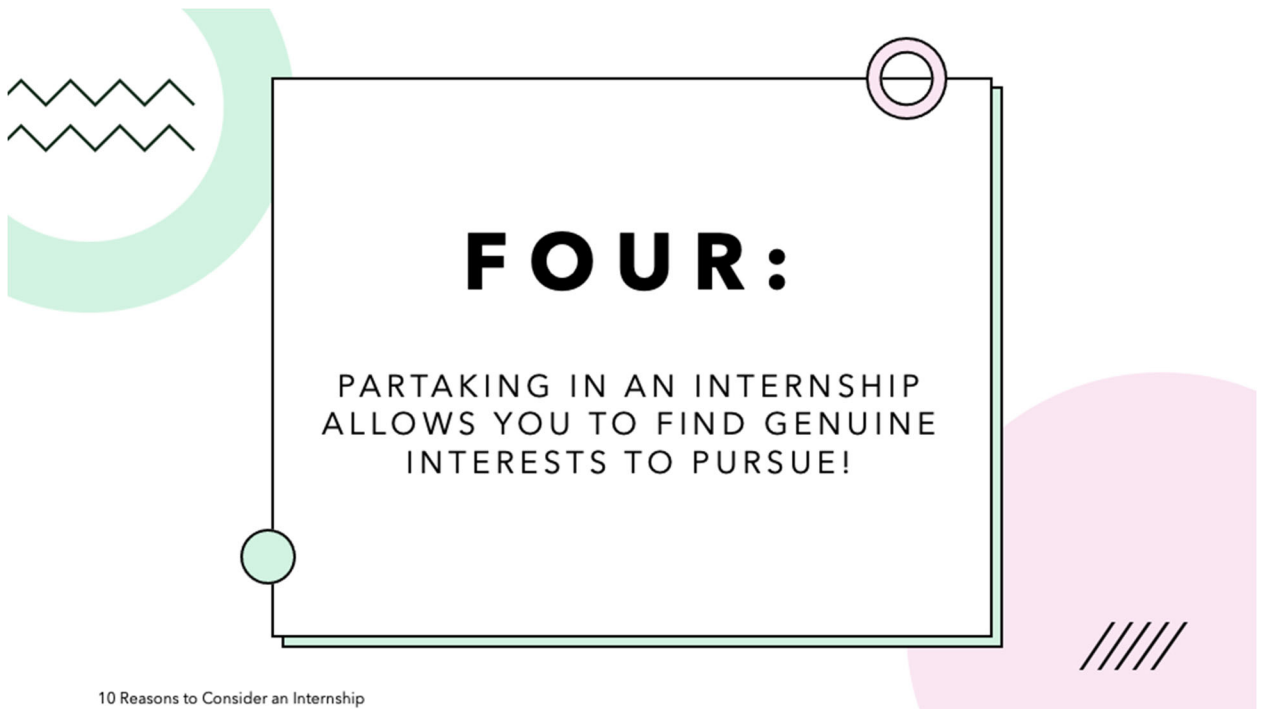
ONE:

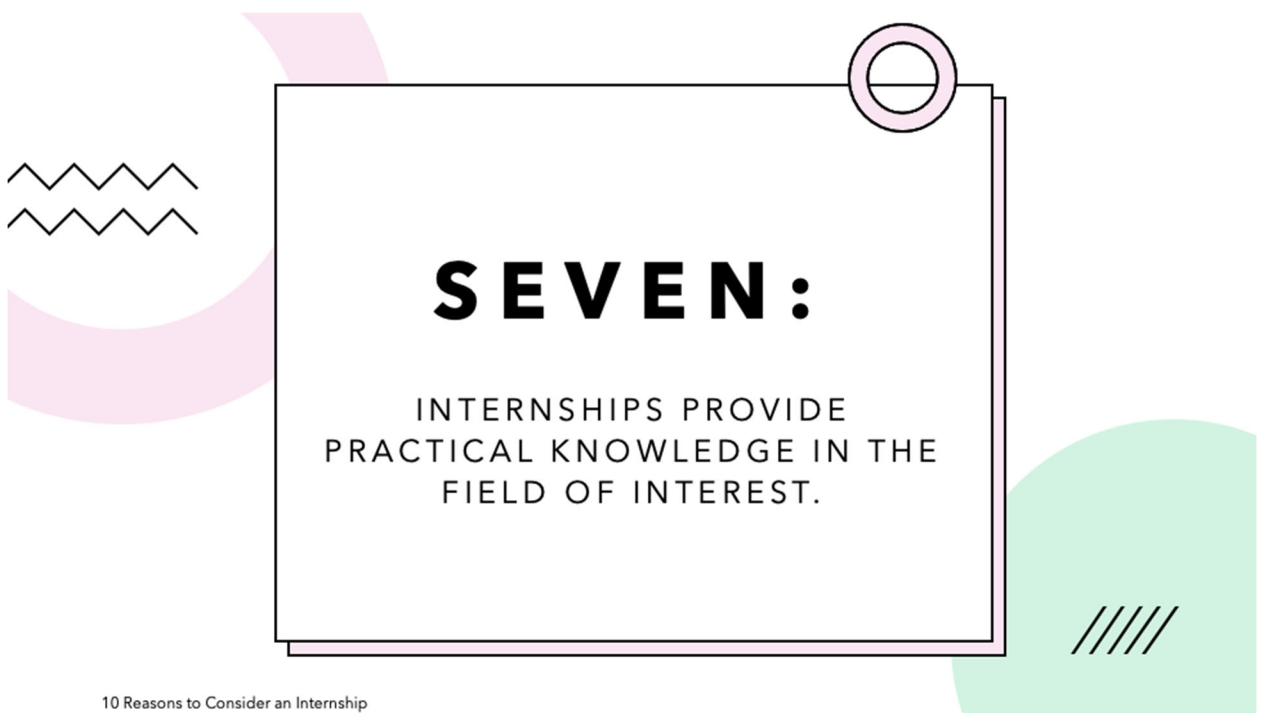
INTERNSHIPS ALLOW YOU TO HAVE
EXPOSURE TO THE WORKPLACE OF
INTEREST, PRIOR TO LONG TERM
COMMITMENT.



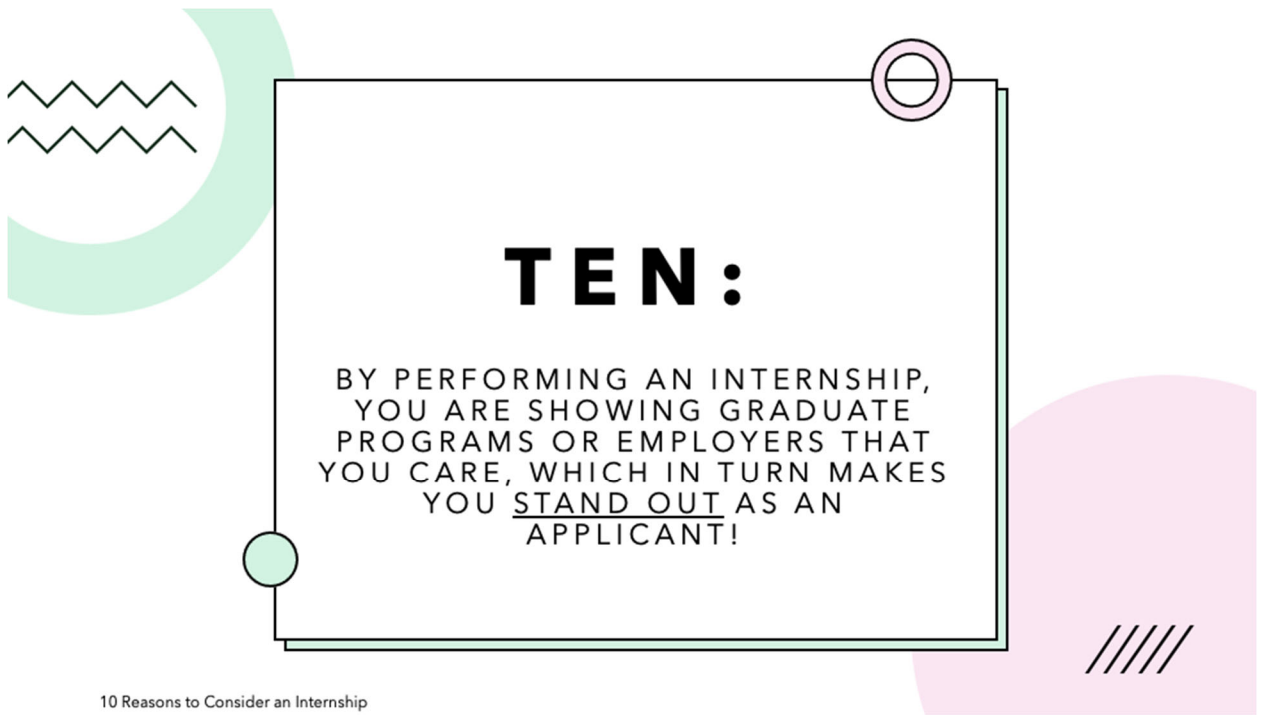
10 Reasons to Consider an Internship











Summary

- In conclusion, there are many reasons to do internships.
- Internships can be done by anyone in any area of study!
- Some benefits include:
 - Internships allow you to achieve your full potential as a student.
 - You know what you are getting into for school or a career prior to fully committing.

10 Reasons to Consider an Internship



Appendix H

Blog Post on Wix





gpm2h8 · 19 hours ago · 2 min read

10 Reasons to Consider an Internship

The following is a presentation of work completed for Middle Tennessee State University's Honors College

Primary investigator : Gracie Johnson

Faculty Mentor : Dr. Dianna Rust

The goal of this creative project is to spread awareness of the importance of internships. This project will provide insight as to how to start an internship, why internships should be considered, and where internships can be done, along with the lasting benefits of an internship.

What is an "Internship"

An internship is a professional learning experience that offers meaningful, practical work related to a student's field of study or career interest. An internship gives a student the opportunity for career exploration and development, and to learn new skills.

What is an internship? UMBC. (n.d.). [https://careers.umbc.edu/employers/internships/what-is-an-](https://careers.umbc.edu/employers/internships/what-is-an-internship/#:~:text=An%20internship%20is%20a%20professional,and%20to%20learn%20new%20skills)

[internship/#:~:text=An%20internship%20is%20a%20professional,and%20to%20learn%20new%20skills](https://careers.umbc.edu/employers/internships/what-is-an-internship/#:~:text=An%20internship%20is%20a%20professional,and%20to%20learn%20new%20skills).

Have you completed an internship before?

Yes

No

According to our studies, the answer to the above question is "yes" about 60% of the time, but why is it that graduate programs and careers prefer applicants to have an internship experience?

For this project, 102 graduate school admissions committees were asked for their input as to how students that have internships differ from other students, what are the benefits of internships, and if there are any notable advantages of internships.

The answers were then analyzed and we were able to formulate the top 10 reasons to consider an internship...

One:

Internships allow you to have exposure to the workplace of interest, prior to long term commitment.

Two:

Internships allow you to recognize the intensity of the work environment of interest, to ensure this is something you truly desire.

Three:

Participating in an internship opens a door for years of knowledge and experience if you are willing to learn.

Four:

Partaking in an internship allows you to find genuine interests to pursue!

Five:

Internships help you form genuine and trusting relationships with mentors, who can help guide you to achieve your goals.

Six:

Performing internships exposes you to diverse environments in the workplace.

Seven:

Internships provide practical knowledge in the field of interest.

Eight:

Internships are a way to enhance previous experiences in a workplace!

Nine:

Partaking in an internship helps you gain professional skills such as manners, time-management, stress-management, and adaptability.

Ten:

By performing an internship, you are showing graduate programs or employers that you care, which in turn makes you stand out as an applicant!

Good news! Internships are not limited by field of study... but rather can be done by ANYONE in any field!

Tags:

#exposure #workplace #intensity #desire #interests #willing #learning #knowledgeispower #experienced #genuine #trust #mentor #achievements #relationships #diverse #skills #environments #workplace #practical #enhance #growth #professional #mannerisms #timemanagement #stress #standout #care #unique

Appendix I

IRB Approval



Office of Research Compliance
2269 Middle Tennessee Blvd.
Sam H. Ingram Bldg (ING) Room 010A
Box 124
Murfreesboro, TN 37132
www.mtsu.edu/irb

Date: April 11, 2023
PI: Gracie Johnson
Department: Middle Tennessee State University, University Studies
Re: Initial - IRB-FY2023-55
10 Reasons to Consider an Internship

The Middle Tennessee State University Institutional Review Board has rendered the decision below for 10 Reasons to Consider an Internship.

Decision: Exempt

Category: Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording).

The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.

Findings:

Research Notes:

Please note:

Any modifications to the approved study must be submitted for review through Cayuse IRB.

Any unanticipated harms to participants or adverse events must be reported immediately to the Office of Compliance, and relevant changes to the protocol must be submitted to the IRB for approval before implementing this change.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the required training. If you add researchers to an approved project, please add the researchers to the project within Cayuse IRB **before** they begin to work on the project.

All research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion and then destroyed in a manner that maintains confidentiality and anonymity.