Sample Proposals for the Journal of Purdue Undergraduate Research (JPUR)

The exact style of your proposal will depend on your field of study, but good proposals will always include some core elements. Note that the color coding is used to demonstrate how the different elements are used in the real examples. There are three examples of abstracts on the following pages for sciences/engineering, social sciences, and humanities/liberal arts. Please observe the differences in the three to determine what style will best match your academic discipline.

If you have further questions about writing your proposal, please contact the Journal Coordinator at jpur@purdue.edu

CORE ELEMENTS

Importance of the problem: Why does society care about the research conducted? What is the “big picture” into which the research fits?

Unknown: What was the specific purpose of the research? What were the study's questions or hypotheses?

Experimental/Methodological Approach: What techniques were used to collect the data or information used in the research?

Data collected: What were the results of the data collection?

Results and Analysis: How was the data analyzed? How does it compare to the current body of knowledge in the field?

Conclusions: What are the conclusions drawn from the data analysis? Is additional work needed?
EXAMPLES

Sciences/Engineering

Is Distant Pollution Contaminating Local Air?
Analyzing the Origins of Atmospheric Aerosols

Understanding the origin of aerosols in the atmosphere is important because of visual pollution, climate impacts, and deleterious health effects due to the inhalation of fine particles. This research analyzed aerosols characterized by their chloride, sulfate, and nitrate content as a function of size over a 3-month period. Due to wind patterns over coal-burning power plants, a higher concentration of local sulfate pollution was expected. Aerosols were harvested on the Purdue University campus using a high-volume air sampler with glass fiber filters and a five-stage impactor that separates the aerosols into five sizes. The filters were extracted in water to dissolve anions and the solution was analyzed using high-pressure liquid ion chromatography. Only trace amounts of chloride with no distinct patterns in size were detected. In total, nitrate content ranged from 0.12 to 2.10 μg/m3 and sulfate content ranged from 0.44 to 6.45 μg/m3 over a 3-month period. As for fine particles, a higher concentration of sulfate was observed. The Hybrid Single-Particle Lagrangian Integrated Trajectory (HYSPLIT) model determines air mass origin, and in this study, higher total sulfate content was observed when the air mass moved out of the southwest, and higher total nitrate content was observed when the air mass originated from the southeast. The author concluded that small particles resulted in sulfate from sulfur dioxide, typically from gas to particle conversion. High sulfur dioxide levels are directly correlated with coal-burning power plant density. Small particulate sulfate found in West Lafayette, Indiana, was determined to originate primarily from power plants in southwest Indiana. Though the results do show a significant amount of potentially harmful aerosols in West Lafayette, there is still further research to be done concerning isotopic composition of those particles in attempts to better explain the chemical pathways.
Hospital readmission rates can be used as an indicator of the quality of health care services and can highlight high-priority research areas to ensure better health. A readmission is defined as when a patient is discharged from an acute care hospital and is admitted back to an acute care hospital in a set amount of days, with 30 days being the current national standard. On average, 19.6% of Medicare patients are readmitted to the hospital within 30 days of discharge and 56.1% within a year (Jencks, Williams, & Coleman, 2009). The hypothesis of this study was that the discharge location, or where a patient went immediately after discharge, would not have a significant effect on readmissions. A data set with all admission records was obtained from a major health provider. These data contain all hospital patients’ demographic and diagnosis information. General, women’s, and children’s hospitals were looked at from a system perspective to study the discharge location of patients as well as the effects of patient demographics on discharge location. By using a z-significance test in Microsoft Excel and SAS 9.2, it was discovered that patients discharged to home have a significantly lower likelihood of readmission. Generally, patients who are discharged to an extended care or intermediate care facility or patients with home health care related services had a significantly higher likelihood of being readmitted. The findings may indicate a possible need for an institution-to-institution intervention as well as institution-to-patient intervention. Future work will develop potential interventions in partnership with hospital staff.
As Purdue University grows, the school’s rich history is sometimes neglected in lieu of developments in present-day interests and needs. Often, the only remaining evidence of community events and distinguished, local individuals are memorials, archive collections, and rarely seen documents. Many communities have access to such documents; however, as the available access to these collections slowly becomes unrecognized, so does the history and remembrance of the individuals and events. The purpose of this research was to determine the source of a small, tarnished trophy in Orlando Itin’s sports memorabilia collection in Bruno’s Pizza Restaurant. This trophy stands as one of the unrecognized items of living history in West Lafayette, Indiana, which spurred the research and development of a further question: how can community historians discover the concealed facts of their local history? Throughout this research, personal interviews and careful searches were conducted through Purdue University’s Virginia Kelly Karnes Archives and Special Collections Research Center, local collections, online databases, and academic journals to recollect the memory of the recipient of the forgotten trophy, former Indiana Governor Harry Guyer Leslie. Leslie was not only a Purdue graduate, but a survivor of the infamous 1903 Purdue Wreck. He made numerous contributions to the University and overcame adversity to become governor of Indiana, but his memory and contributions to the University and state are barely documented. This article explores not only Governor Leslie’s history, but also examines the methods community historians can use to conduct their own local research.