

ACADEMIC COMMUNICATION Summer 2017 | So-Yeon Yoon

WRITING A GOOD ABSTRACT

The Abstract

- How do you make it concise but include all the pertinent facts and establish need?
- Is it best to write the abstract after you've completed the study?
- How do you know where to draw the line on what you should and shouldn't put in the abstracts?
- What is the most effective way to order the content of the abstract?
- How to compose a strong abstract: What should and what should not be mentioned in the abstract.
- How long is the abstract?

The Abstract

Goal: What do you want to know?

The Abstract = Synopsis, Program Summary

Reviewer's

- ✓ Read it first
- ✓ May **only read the abstract**
- ✓ initial impression of your work
- ✓ (Might = pass/fail for your submission)

Your “60-second sell.”

- ✓ Should arouse reader interest.
- ✓ Make the reader want to know more about the project.
- ✓ And, it all happens in a minimum of 250 words to a maximum of one page.

The Abstract contains

- Significance/Needs
- Brief Background
- Objectives/Methodology/Approach/Key Activities
- Project Design and Data Analysis

The Abstract addresses

1) Why + What (is the study important?)

: **motivation/problem statement** – Why do we care about the problem? What practical, scientific, or theoretical gap is your work filling?

2) How (is being done?)

: **methods/procedure/approach** – What do you actually do to get your results (e.g., observed 10 students, conducted an experiment using..., compared & analyzed the process of...,)

3) Results/Finding

: from 1 & 2, what did you learn or create?

4) Conclusion/implication

: link back to 1 from your findings.

What are the larger implications of your work and findings?

Sample abstracts (1):

Subtype of Autism: Developmental Verbal Dyspraxia – Psychology

The purpose of this research is to identify a subtype of autism called Developmental Verbal Dyspraxia (DVD). DVD is a motor-speech problem, disabling oral-motor movements needed for speaking. The first phase of the project involves a screening interview where we identify DVD and Non-DVD kids. We also use home videos to validate answers on the screening interview. The final phase involves home visits where we use several assessments to confirm the child's diagnosis and examine the connection between manual and oral motor challenges. By identifying DVD as a subtype of Autism, we will eliminate the assumption that all Autistics have the same characteristics. **This will allow for** more individual consideration of Autistic people and may direct future research on the genetic factors in autism.

1) Examples extracted from Leah Carroll's HOW TO WRITE AN ABSTRACT: Tips and Samples
<http://hsp.berkeley.edu/sites/default/files/HOW%20TO%20WRITE%20AN%20ABSTRACT.pdf>

Quantifying the Mechanics of a Laryngoscopy - engineering

Laryngoscopy is a medical procedure that provides a secure airway by passing a breathing tube through the mouth and into the lungs of a patient. The ability to successfully perform laryngoscopy is highly dependent on operator skill; experienced physicians have failure rates of 0.1% or less, while less experienced paramedics may have failure rates of 10-33%, which can lead to death or brain injury. **Accordingly, there is a need** for improved training methods, and virtual reality technology holds promise for this application. The immediate **objective of this research** project is to measure the mechanics of laryngoscopy, so that an advanced training mannequin can be developed. This summer an instrumented laryngoscope has been developed which uses a 6-axis force/torque sensor and a magnetic position/orientation sensor to quantify the interactions between the laryngoscope and the patient. Experienced physicians as well as residents in training have used this device on an existing mannequin, and the force and motion trajectories have been visualized in 3D. One **objective** is to use comparisons between expert and novice users to identify the critical skill components necessary for patients, to identify the mechanical properties of the human anatomy that effect laryngoscopy, and thus enable the development of a realistic training simulator. **In the future** an advanced training mannequin will be developed whose physical properties will be based on our sensor measurements, and where virtual reality tools will be used to provide training feedback for novice users.

The *Listeria monocytogenes* p60 Protein is not Essential for Viability in vitro, but Promotes Virulence in vivo

Intracellular pathogens (agents which infect host cells), such as *Mycobacterium tuberculosis* and *Listeria monocytogenes*, cause very high mortality rates in the United States. Therefore, deciphering the mechanisms through which the pathogens cause disease is of great interest. *Listeria* infection of mice is a welldeveloped model system for studying the fundamentals of host-pathogen interactions. In vitro assays in animal cell cultures have helped show that *Listeria* causes illness by secreting molecules, called virulence factors, to the outside of the bacterial cell in order to affect the host organism. **My work involves one such secreted protein**, called p60. P60 is an antigen (an agent seen by the host immune system) implicated in regulated bacterial cell wall breakdown. The **objective of this study** was to examine two questions: first, is p60 essential to the viability of *Listeria*, as previously published? and second, is p60 a virulence factor in *Listeria*? To examine these questions, I constructed a *Listeria* strain lacking p60 (p60-). This new strain displayed no defect in viability. In fact, most standard in vitro pathogenicity assays were normal for p60-. However, when p60- was tested in a mouse (in vivo), a 1000-fold reduction in virulence was observed. **This discovery suggests** that p60 is indeed a key factor in the disease-causing ability of *Listeria*, but not essential for viability. Future studies will focus on the precise role of p60 in *Listeria* pathogenesis. **This work increases** our understanding of such diseases as tuberculosis, various food poisonings, and meningitis.