

# How to Write an Abstract

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February 7, 2017, 5pm

HCIC 2007

A photograph of a man with glasses and a plaid shirt operating a large industrial machine, likely a printing press or similar equipment. He is focused on the task at hand. The background shows a workshop or laboratory setting with various equipment and supplies.

**Got it! ...now,  
gotta write  
my abstract  
for the  
WKU Student  
Research  
Conference!**

**More info at [wku.edu/studentresearch](http://wku.edu/studentresearch)   Deadline: February 17**

# What is the Purpose of My Abstract?

- To propose a talk, poster, performance, etc. for a conference?
  - If you are applying to the SRC, this is your purpose.
- To apply for a research grant or other funding?
- To provide an overview of my completed project for indexing purposes (library database, literature review, etc.)?

# Who is the Audience for My Abstract?

- Specialists or professionals directly in my field of study?
- Highly educated non-specialists (such as professors from a variety of academic, creative, and professional fields)?
  - This is the audience for the SRC abstracts.
- Book, journal, or other publication editor?
- The general public?

# Have I Completed the Project Yet?

## If Yes ...

- Abstract should provide a clear summary of your findings or results that can stand in for the larger work.
- Say exactly what you created, argued, found, concluded.

## If No...

- Abstract should map out a clear potential direction for the project.
- Summarize main research question and goals.
- Outline methods, materials, data sets, etc. you will use to address your research question.

# Typical Process of Thought when Developing a Project

What am I interested in?/What do I want to do?



How will I do this?



Here's what I found and why it's important to others in my field.

# Explaining a Project to an Audience with Limited Time and Interest

This is why you should care about my project [and keep reading this abstract].



This is what my research found (or hopes to find). / This is what I made (or will make).



This is how I did it (or will do it).

# How Do I Organize My Abstract?



1. What is my general topic of inquiry? Why is it important? (Outer Circle)
2. What specific question or issue in the field am I addressing? (Middle Circle)
3. What did I find?/What will I do to answer this question? (This is where you describe specific methods, techniques, results, materials, etc. (Bull's Eye)

## “Consolation and Community in Mary Wroth’s Sonnets”

Author: Leila Watkins

Literary scholars often claim that Renaissance erotic sonnet sequences are more concerned with exploring the authorial self than they are with actually courting a real human lover. Because Mary Wroth was the first woman to publish an erotic sonnet sequence in English, many scholars have discussed her work as a rare glimpse into a female perspective on selfhood and authorship in the 1600s. A closer look at Wroth’s poems, however, reveals much more than a female version of the self-examination and introspection we have come to regard as one of the primary characteristics of the Renaissance sonnet sequence. Rather than simply use the genre to fashion a highly stylized authorial self, as many of her male contemporaries do, Wroth envisions the sonnet sequence as a more communal genre capable of helping a diverse range of readers work through emotional distress. In the first section of this paper, I argue that *Pamphilia to Amphilanthus* constructs an ideal community of readers founded on shared emotion rather than status markers such as gender or social rank. In the latter sections, I show how Wroth employs and revises the conventions of the sonnet sequence to implement her vision of the genre as a source of consolation for those who suffer from erotic disappointment or frustration.

### **What is my general field of inquiry? Why is it important?**

Literary scholars often claim that **Renaissance erotic sonnet sequences** are more concerned with exploring the authorial self than they are with actually courting a real human lover.

### **What specific question in the field am I addressing?**

Because Mary Wroth was the first woman to publish an erotic sonnet sequence in English, many scholars have discussed her work as a rare glimpse into a **female perspective on selfhood and authorship in the 1600s**. A closer look at Wroth's poems, however, reveals much more than a female version of the self-examination and introspection we have come to regard as one of the primary characteristics of the Renaissance sonnet sequence.

### **What did I find?/What will I do to answer this question?**

Rather than simply use the genre to fashion a highly stylized authorial self, as many of her male contemporaries do, **Wroth envisions the sonnet sequence as a more communal genre capable of helping a diverse range of readers work through emotional distress**. In the first section of this paper, I argue that *Pamphilia to Amphilanthus* constructs an ideal community of readers founded on shared emotion rather than status markers such as gender or social rank. In the latter sections, I show how Wroth employs and revises the conventions of the sonnet sequence to implement her vision of the genre as a source of consolation for readers who suffer from erotic disappointment or frustration.

## **“A Novel Synthetic Biology Method to Study the Cooperative Behavior of Kinesin Motors in Cells”**

Authors: Stephen R. Norris<sup>1,2</sup>, Virupakshi Soppina<sup>2</sup>, Aslan S. Dizaji<sup>2</sup>, David Sept<sup>3</sup>, Dawen Cai<sup>2</sup>, Sivaraj Sivaramakrishnan<sup>1,2</sup>, and Kristen J. Verhey<sup>1,2</sup>

*Departments of Biophysics<sup>1</sup>, Cell and Developmental Biology<sup>2</sup>, Department of Biomedical Engineering<sup>3</sup>, University of Michigan, Ann Arbor, MI 48109*

Molecular motor proteins such as kinesin, dynein, and myosin are essential for the organization and function of cells. These motors move along the cytoskeleton to transport cellular cargo – including organelles, vesicles, and even viruses – to specific locations within the cell at specific times. Since its discovery in 1985, the motor protein kinesin has been studied intensively on an individual, single-molecule level. In cells, however, kinesin is thought to work in teams where multiple motors cooperate to transport cargo; unfortunately, this team-based behavior remains poorly understood. Here, we develop a protein-based synthetic biology method to assemble teams of kinesin motors on an artificial cargo, the first such method to be developed inside cells. First, we describe the system’s development and use FRET and two-color TIRF microscopy to demonstrate our control of motor number and spacing in cells with nanometer precision. Second, we use a combination of live-cell TIRF imaging and automated image tracking to show that mixtures of multiple motors are highly dependent on the state of their microtubule track inside cells. Together, this cutting-edge study provides a new approach to study multi-protein behavior in cells, and will be critical for our understanding of motor-related diseases such as neurodegeneration and cancer.

### **What is our general field of inquiry? Why is it important?**

Molecular motor proteins such as kinesin, dynein, and myosin are essential for **the organization and function of cells**. These motors move along the cytoskeleton to transport cellular cargo – including organelles, vesicles, and even viruses – to specific locations within the cell at specific times.

### **What specific question in the field are we addressing?**

Since its discovery in 1985, the motor protein kinesin has been studied intensively on an individual, single-molecule level. In cells, however, **kinesin is thought to work in teams where multiple motors cooperate to transport cargo**; unfortunately, this team-based behavior remains poorly understood.

### **What did we find?/What will we do to answer this question?**

Here, **we develop a protein-based synthetic biology method** to assemble teams of kinesin motors on an artificial cargo, the first such method to be developed inside cells. First, **we describe** the system's development and use FRET and two-color TIRF microscopy to demonstrate our control of motor number and spacing in cells with nanometer precision. Second, **we use** a combination of live-cell TIRF imaging and automated image tracking to show that mixtures of multiple motors are highly dependent on the state of their microtubule track inside cells. Together, this cutting-edge study **provides a new approach** to study multi-protein behavior in cells, and will be critical for our understanding of motor-related diseases such as neurodegeneration and cancer.

# Mistakes to Avoid

- Overly creative titles that make it difficult to figure out the topic of the presentation.
- Overly creative or fluffy introductory sentences.
  - “Have you ever wondered ...”
  - “Since the beginning of history ...”
  - “Webster’s Dictionary defines ...”
  - “A famous person once said ...”
- Extensive references to the work of other specific scholars (referring to the general state of scholarship is ok).
- Academic or technical jargon (*especially* in the earlier sentences of the abstract)

# Multi-Author Projects

- Be sure to give credit to everyone who contributed to the project.
- *Generally*, but not always, if you are presenting a paper or a poster, you are the first author.
- If authors belong to different academic departments, it may be necessary to specify departmental affiliation as well.
- **Always** ask your advisor or principal investigator about the proper order for listing authors and departmental affiliations.

**Student Research Conference** Student Workshop Series

# WKU REACH 2017

Research Experiences And Creative Heights

## **Tuesday, February 7**

5:00 p.m. | HCIC 2007

### **How to Write an Abstract**

Leila Watkins

## **Friday, February 17**

11:30 a.m. | GH 236

### **How to Visualize Research Data**

Leyla Zhuhadar

## **Monday, February 27**

4:00 p.m. | HCIC 2007

### **How to Make a Poster**

Rodney King

## **Tuesday, March 21**

11:30 a.m. | HCIC 3005

### **How to Give a Talk**

Lance Hahn



[www.wku.edu/studentresearch](http://www.wku.edu/studentresearch)