

# Silk Biomaterials Engineering

## Goals:

- 1) Read and analyze primary scientific literature
- 2) Get a solid background and understanding of silk and other biomaterials by reading papers and presenting and discussing them.

## Presentations:

The main idea of the in-class presentations is to communicate the assigned papers in a complete and efficient manner. The whole presentation, for each paper, should be no more than five minutes. This time should be used to discuss the paper and cover the following points:

- 1) Start with a summary of the paper's conclusions and results.**
- 2) Assess whether the methods used in the article are appropriate for the research.**
- 3) Finally does the data obtained support the conclusions that the authors reached.**
- 4) If it is a review paper then focus on 1. since this will be the majority of the article.**

The goals are to determine the main points of the published work and if the steps used to obtain them are valid and reasonable. Upon the completion of a paper's presentation questions maybe asked and a brief discussion will be held to answer these questions as thoroughly as possible. The presentations will proceed through the class until each student has presented all of their assigned articles.

## Homework:

Each week, every student will be assigned two article that they will be responsible for reading, understanding, and summarizing for a meaningful and continuous presentation for the following week. The subjects for each week will vary and can found in the tentative schedule. Also, if students are unfamiliar with various topics, methods, and results they are strongly encouraged to seek assistance, from various resources, before the next class to prevent wasting time and to increase the overall benefit from the class.

Before the beginning of following week's class, a one page summary of the top four papers from the previous week will need to be submitted to Dr. Jones. These top papers are each student's individual choice and should not be the same papers that the student presented. The summary should briefly describe each paper's results/conclusions and the student's reasons/logic as to why this paper was one of the top articles. These need to be emailed by Monday morning.

## Grading:

Grades are based on oral presentations and the weekly write-ups. Basically did you understand and present the paper(s) you were assigned and the same for the papers you chose to write about. If you have any questions concerning your papers you can talk to Ana, Xiaoli, Justin, [Justin.a.jones@usu.edu](mailto:Justin.a.jones@usu.edu) 7-9292 or Randy, [randy.lewis@usu.edu](mailto:randy.lewis@usu.edu) or 435-797-9291.

## **Schedule:**

Week 0 (1/8/18):	Introduction and Syllabus discussion
Week 1 (1/15/18):	No class, MLK Day
Week 2 (1/22/18):	Methods
Week 3 (1/29/18):	Synthetic Fibers Overview
Week 4 (2/5/18):	Overview of Insect Silks
Week 5 (2/12/18):	Major Ampullate Silk
Week 6 (2/20/18):	Monday schedule on Tuesday
Week 7 (2/26/18):	Minor Ampullate Silk
Week 8 (3/5/18):	No class, Spring Break
Week 9 (3/12/18):	Recent Scientific Articles (Your Choice)
Week 10 (3/19/18):	Flagelliform and Aggregate Silks
Week 11 (3/26/18):	Piriform/Pyriform Silks
Week 12 (4/2/18):	Aciniform and Tubuliform Silks
Week 13 (4/9/18):	Recent Scientific Articles (Your Choice)
Week 14 (4/16/18):	Applications and Diversification of Spider Silks
Week 15 (4/23/18):	Recent Spider Silk Articles (Last 6 Months)