

# Basics of Bioinformatics and Genome-wide Association Studies (GWAS)

Richard Flamio Jr., Ph.D.

Madison Zimmerman

Kristina M. Ramstad, Ph.D.

University of South Carolina Aiken

# Dr. Ricky Flamio

Postdoc in Ramstad Lab at USC Aiken

Interested in using bioinformatic tools to analyze complex genomes

- Diploid/tetraploid sturgeon and salmon mosaics
- Bird microchromosomes

[rflamio \(Ricky Flamio\) \(github.com\)](https://github.com/rflamio)

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# Dr. Kristina Ramstad

Associate Professor of Biology, USC Aiken

Interested in:

- genetic bottleneck effects and inbreeding
- effects of mating system on genetic variation
- applied conservation management

[kristinar@usca.edu](mailto:kristinar@usca.edu)





# Madison Zimmerman

Undergraduate student in Ramstad Lab

Interested in bioinformatics and pipeline development.

Current project is focused on using genomic data to determine population structure in wood storks.

[mlz@usca.edu](mailto:mlz@usca.edu)



# Course Overview

## **Monday**

10 AM – 12 PM: Introduction, Linux/BASH

12 PM – 1 PM: Lunch Break

1 PM – 3 PM: R and R Studio

## **Tuesday**

10 AM – 12 PM: Genome Analysis Toolkit (GATK)

12 PM – 1 PM: Lunch Break

1 PM – 3 PM: Genome-wide Association Study (GWAS) Lecture

# Course Overview

## **Wednesday**

10 AM – 12 PM: PLINK and running a GWAS

12 PM – 1 PM: Lunch Break

1 PM – 3 PM: Paper Discussion, Questions, and Survey