

Sam Ardery, B.A. in Biology

Cell: (317) 366-6875 Email: sardery@outlook.com

Education & Honors

- **Sept. 2016 to April 2021 – Carthage College**
 - Major: Biology
 - Minor: Computer Science
 - GPA 3.811
 - Dean's List: Fall 2017, Spring 2018, Fall 2018, Fall 2019, Spring 2020, Fall 2020, Spring 2021
- **Recognition**
 - Director's Award for Music Excellence: Awarded Fall 2017
 - Biology Department Fellowship: Awarded Spring 2019 and Spring 2020
 - Earl Lambert Award for Excellence in Service to the Biology Department: Awarded Spring 2020 and Spring 2021

Research Experience

- **Summer Student Program at The Jackson Laboratory – Summer 2021**
 - Mentor: Dr. Steve Munger
 - Comparison of eQTL Identification when using Single-end or Paired-end RNA-sequencing Data
 - Large data analysis in R of Diversity Outbred mice
 - Experience with high performance computing clusters
- **Independent Research at Carthage College – Fall 2020**
 - Mentor: Dr. Andrea Henle
 - Analysis of WRKY70 gene of *A.thaliana* in response to lack of gravity
 - Analysis using a Flashlapse system of gravitropic response
- **SURE Program, Carthage College – Summer 2020**
 - Mentor: Dr. Steve Henle
 - Development of an R-based workflow for RNA-seq analysis
 - Search for and test R packages for use in the steps of RNA-seq analysis
 - Attended week-long workshop in RNA-seq analysis using R and Bioconductor
 - Analysis of MFRP knock-out human retinal pigment epithelium cells
- **SURE Program, Carthage College - Summer 2019**
 - Mentor: Dr. Steve Henle
 - Functionality of the YAP transcription factor in zebrafish retinal development
 - Husbandry and mating of zebrafish lines
 - Analysis of confocal images of developing zebrafish retinas
 - Development of CRISPRs for labeling of endogenous YAP gene
 - Optimization of protocols for obtaining and fixing embryonic zebrafish
 - Genotyping of zebrafish
- **Independent Research at Carthage College - Fall 2018 to Spring 2021**
 - Extension of summer research

- Development of microinjection protocol for injection of GFP labeling CRISPRs
- General upkeep of zebrafish facility

Relevant Coursework and Skills

- **Carthage College Departments of Biology and Chemistry**

- Senior Seminar in Biology – BIO 4120
 - Development of manuscript style thesis
 - “Developing an R-based Workflow for RNA-seq Analysis to Determine Gene Expression in Response to Optate”
- Independent Study in Developmental Biology – BIO 4500
 - Journal Club style learning
- Independent Study in Bioinformatics – BIO 4500
 - RNA-sequencing Analysis, Genome Wide Association Study Analysis
- Biochemistry (Lab) – CHM 3010
 - Protein classification and mutation via *E. coli*
- Space Biology (Lab) – BIO 400P
 - Arduino and Raspberry Pi setup and use, soldering
- Microbiology (Lab) – BIO 3340
 - Isolation and classification of unknown bacteria
- Genetics (Lab) – BIO 2400
 - Drosophila Crosses, Yeast Mating, PCR
- Cell and Molecular Biology (Lab) – BIO 2300
 - Spectrophotometry, SDS-Page, Light Microscopy, Cell Culture, ImageJ software analysis
- Introduction to Ecology (Lab) – BIO 2200
 - Insect and plant collection and identification, large data analysis
- Organisms, Populations, and Systems (Lab) – BIO 1120
 - Experimental design, Raising *Manduca sexta*, protein analysis using Chimera software
- Molecules, Cells, and Organisms (Lab) – BIO 1110
 - Bacteriophage isolation and DNA extraction

- **Carthage College Department of Computer Science**

- Data Science II – CSC 1040
 - Performing data analytics using functionality provided by the Tidyverse package in R
- Object Oriented Programming – CSC 2910
 - Program development in Java
- Database Design and Management – CSC 2810
 - Design of SQL databases using Microsoft Access, SQLite at command line and using DB Browser
 - Design of NoSQL databases using Mongo and Firebase
- Data Science I – CSC 2030
 - Performing data analytics using R and Python
- Principles of Computer Science I and II – CSC 1810 and 1820
 - Program development in C++

Leadership Roles

- **Lead Lab Assistant for Introduction to Biology/Phage Hunters – Fall 2020 to Spring 2021**
 - Prepare labs for safe execution of each class
 - Train younger lab assistants
 - Other “lab assistant” duties
- **Lead Lab Assistant for Cell Biology – Fall 2019 to Spring 2021**
 - Assign tasks to other lab assistants
 - Oversee quality of lab aid from lab assistants
 - Design and execute preparation notes for each lab class
 - Other “lab assistant” duties
- **Lab Assistant for Introduction to Biology/Phage Hunters – Fall 2018 to Spring 2021**
 - Aid Students in lab work
 - Maintain lab safety and organization
 - Procure and prepare necessary supplies
- **Lab Assistant for Cell Biology – Spring 2019**
 - Aid students in lab work
 - Maintain lab safety and organization
 - Procure the necessary supplies and chemicals
- **Beta Beta Beta Biological Honors Fraternity Historian – Fall 2019 to Spring 2021**
 - Aid in meetings and events
 - Provide the historical context for the fraternity at Carthage College
 - Maintain a social media presence for the fraternity
- **Catholics @ Carthage President – Fall 2018 to Spring 2019**
 - Lead/Schedule meetings
 - Prepare and execute events for members and the community
 - Act as a connection between the Catholic community on campus and Catholic churches in the greater Kenosha/Racine area
- **Zebrafish Fellow – 2019-2020 school year, 2020-2021 school year**
 - Train new zebrafish assistants
 - Aid assistants with any necessary task
 - Develop and implement new food sources for the zebrafish
 - Other “Zebrafish Assistant” duties
- **Zebrafish Assistant – Spring 2018 to Spring 2021**
 - Maintain a healthy environment for zebrafish
 - Perform scheduled maintenance of the zebrafish system
 - Manage and train new zebrafish assistants

Conferences and Presentations

Poster Presentations

- **Carthage College Celebration of Scholars – Spring 2018**
 - Not Your Grandma’s Chili: An examination of the bacteriophage KidneyBean
- **Society for Neuroscience Chicago Conference – Spring 2020**

- Don't stop your YAPing: How expressing constitutively active YAP affects retinal development and regeneration
 - **Cancelled due to COVID-19
- **Carthage College Celebration of Scholars – Spring 2020**
 - Taking a YAP Year: Studying YAP in Optic Nerve Development and Regeneration in Zebrafish
- **Midbrains 2020 – Fall 2020**
 - Midwest Regional Undergraduate Research Symposium in Neuroscience
 - Don't stop your YAPing: How expressing constitutively active YAP affects retinal development and regeneration
- **The Jackson Laboratory Summer Student Symposium – Summer 2021**
 - Comparison of eQTL Identification when using Single-end or Paired-end RNA-sequencing Data

Oral Presentations

- **Midstates Consortium for Math and Science – November 2019**
 - Don't stop your YAPing: How expressing constitutively active YAP affects retinal development and regeneration

Employment

- **Pizza Delivery Driver at Papa Johns – Spring 2016 to Spring 2018**
 - Interact with customers to ensure an excellent experience
 - Maintain a clean work environment in the store
- **Camp Counselor at Carmel Clay Parks and Recreation – Summer 2018**
 - Entertain large groups with games and crafts
 - Organize supplies needed for the week's activities
- **Sales Associate at Mike Bjorn's Fine Clothing – June 2019 to Fall 2020**
 - Aid customers in the suit or tuxedo shopping experience
 - Maintain a clean work environment

Volunteer Work and Community Service

- **Sunday School Teacher – Fall 2013 to Spring 2016**
 - Prepare weekly classes on topics relevant to second grade students
- **Mass Musician for Christmas and Easter**
 - Aid in celebration of Christmas and Easter mass through music ministry
- **Quilts of Valor member**
 - Sewing quilts for veterans

Interests and Accolades

- **Competent in German Speaking**
 - Four years of German education, 2013 to 2015 and 2017 to 2019
- **Apprenticeship as a seamstress – Fall 2013 to Spring 2017**
 - Design of women's and men's clothing
 - Understanding of color theory and principles of design
- **Performing Member of Wind and Philharmonic Orchestra – Fall 2017 to Spring 2021**
 - Performance on Horn