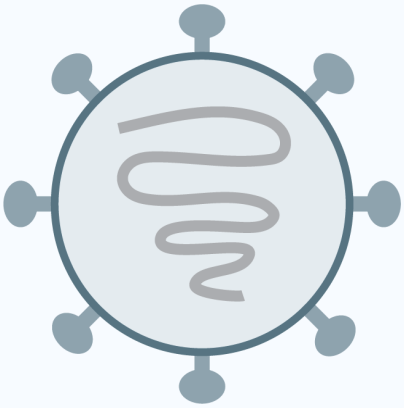
SARAH ARCOS

I am passionate about using computational methods to explore high-throughput biological datasets in a reproducible and rigorous way. I am a post-doctoral fellow in Dr. Adam Lauring's lab at the University of Michigan, where I use molecular biology, computational, and statistical toolboxes to study RNA virus evolution.



EDUCATION

2020 | 2015

PhD., Biochemistry
Vanderbilt University — Nashville, TN

- Studying RNA-protein interactions and RNA virus replication

2015 | 2011

B.S., Neurobiology, Cum laude
Georgetown University — Washington, DC

- Studied developmental biology of the central nervous system

RESEARCH EXPERIENCE

Current | 2021

Postdoctoral Fellow
Lauring Laboratory — University of Michigan

- RNA virus evolution
- Influenza A polymerase speed and fidelity
- Epistatic interactions within the Influenza A polymerase complex

2020 | 2015

Graduate Researcher
Ascano Laboratory — Vanderbilt University

- RNA virus replication, innate immune evasion
- Protein-RNA interactions
- Post-transcriptional gene regulation in the innate immune system

2015 | 2012

HHMI Undergraduate Research Assistant
Silva Laboratory — Georgetown University

- Investigated the role and regulation of SOX14 during central nervous system development
- Used the model organism *Xenopus laevis*

CONTACT

sarcos@med.umich.edu
sarah_arcos
github.com/saraharcos
saraharcos.github.io

LANGUAGE SKILLS

- R
- C++
- Python
- Bash

*Made with the R package **pagedown**.*

The source code is available on github.com/nstrayer/cv.

Last updated on 2023-08-03.

INDUSTRY EXPERIENCE

2018 | 2018

Infectious Disease/Microbiology Intern

Advisors: Dr. Bret Sellman, Dr. Taylor Cohen

MedImmune/Astra Zeneca

- Antibody design and development
- mtDNA haplogroup-dependent neutrophil responses to *Staphylococcus aureus* alpha-toxin
- Neutrophil extracellular trap release

TEACHING EXPERIENCE

Current | 2019

R Fridays Founder

Vanderbilt Biochemistry Department

Vanderbilt University

- Leader of a peer group dedicated to discussion and problem solving related to biological data analysis in R
- The R fridays blog is updated with interesting discussion topics from previous meetings

Current | 2023

Software Carpentries Instructor

Michigan Medicine

University of Michigan

- Instructor and TA for UM Software Carpentries Workshops
- TA: March 28th - 29th, 2023
- Instructor: May 14th - 25th, 2023

SERVICE POSITIONS

2018 | 2017

Vice President, Biochemistry Student's Association

Vanderbilt University

- Coordinated the 2018 Biochemistry Department Annual Symposium

SELECTED PRESS (ABOUT)

2020

New method captures early viral-host protein interactions[1]

VUMC Reporter

- Story of the VIR-CLASP method developed with Dr. Byungil Kim and Dr. Manny Ascano

I believe that scientific reproducibility depends upon improved communication between data producers and data analyzers, and I am passionate about increasing data analysis accessibility for wet lab biologists.

SELECTED PRESS (BY)

2019

Dr. David Mitchell[2]

RNA Society

- Authored a spotlight on fellow RNA Society member Dr. David Mitchell

PUBLICATIONS

2023

Mutual information networks reveal evolutionary relationships within the Influenza A polymerase[3]

Virus Evolution

- **Sarah Arcos**, Alvin X. Han, Aartjan J W Te Velthuis, Colin A Russell, and Adam S Lauring

2021

ELAVL1 primarily couples mRNA stability with the 3' UTRs of interferon stimulated genes[4]

Cell Reports

- Katie Rothamel, **Sarah Arcos**, Byungil Kim, Clara Reasoner, Neelanjan Mukherjee, and Manuel Ascano

2020

Discovery of Widespread Host Protein Interactions with the Pre-replicated Genome of CHIKV using VIR-CLASP

Molecular Cell

- Byungil Kim*, **Sarah Arcos***, Katherine Rothamel, Jeffrey Jian, Kristie L Rose, W Hayes McDonald, Yuqi Bian, Seth Reasoner, Nicholas J Barrows, Shelton Bradrick, Mariano A Garcia-Blanco, and Manuel Ascano. *Co-first authors

2020

Viral cross-linking and solid-phase purification enables discovery of ribonucleoprotein complexes on incoming RNA virus genomes[5]

Nature Protocols

- Byungil Kim*, **Sarah Arcos***, Katherine Rothamel, and Manuel Ascano. *Co-first authors

SELECTED TALKS

2023

Mutual information networks reveal evolutionary relationships within the Influenza A polymerase

FASEB Mechansisms of Microbial Pathogenesis Meeting

Southbridge, MA

2022

Mutual information networks reveal evolutionary relationships within the Influenza A polymerase

American Society for Virology Annual Meeting

Madison, WI

2019

Discovery of widespread host protein interactions with pre-replicated RNA virus genomes using VIR-CLASP

EMBL Protein Synthesis and Translational Control Workshop

Heidelberg, Germany

2019

N6-Methyladenosine-dependent regulation of the pre-replicated Chikungunya viral genome

Vanderbilt Biochemistry Department Annual Symposium

Nashville, TN

2018

N6-Methyladenosine-dependent regulation of RNA during Chikungunya virus infection

RNA Society Annual Meeting

Berkeley, CA

2014

The role and regulation of SOX14 in the development of the central nervous system in Xenopus laevis

Georgetown- Howard Hughes Medical Institute Summer Research Symposium

Washington, DC

GRANTS AND AWARDS

2022 | 2021

Molecular Mechanisms of Microbial Pathogenesis Post-doctoral Training Grant

University of Michigan

- T32AI007528, PI: Dr. Vern Carruthers

2020

Vanderbilt Russell G. Hamilton Graduate Leadership Institute Travel Grant

Vanderbilt University

- Used to attend rstudio::conf 2020 in San Francisco, CA

2019

EMBL Advanced Training Center Corporate Partnership Travel Fellowship

EMBL Heidelberg

- Used to attend the 2019 EMBL Protein Synthesis and Translational Control Workshop

2018 | 2016

National Institute of Allergy and Infectious Diseases Pre-doctoral Training Grant

Vanderbilt University

- T32AI111254, PI: Dr. Eric Skaar

2018

RNA Society Travel Grant

RNA Society

- Used to attend the 2018 RNA Society Annual Meeting in Berkeley, CA

2018 **Frank Chytil Travel Award**
Vanderbilt University
- Used to attend the 2018 RNA Society Annual Meeting in Berkeley, CA

2018 **Best Poster Award, Vanderbilt Biochemistry Department Annual Symposium**
Vanderbilt University
- Poster title: N6-Methyladenosine-dependent regulation of RNA during Chikungunya virus infection and innate immune activation

PROFESSIONAL MEMBERSHIPS

Current | 2021 **American Society for Virology**

2021 | 2018 **RNA Society**

2020 | 2016 **Biochemistry Students Association**
Vanderbilt University

2020 | 2016 **Vanderbilt Institute of Chemical Biology**
Vanderbilt University

2020 | 2016 **Chemical Biology Association of Students**
Vanderbilt University

LINKS

1: https://news.vumc.org/2020/05/07/new-method-captures-early-viral-host-protein-interactions/
2: https://www.rnasociety.org/dr--david-mitchell
3: https://academic.oup.com/ve/article/9/1/vead037/7181271
4: https://www.biorxiv.org/content/10.1101/2020.08.24.263418v1
5: https://www.biorxiv.org/content/10.1101/2020.04.08.032441v1