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.
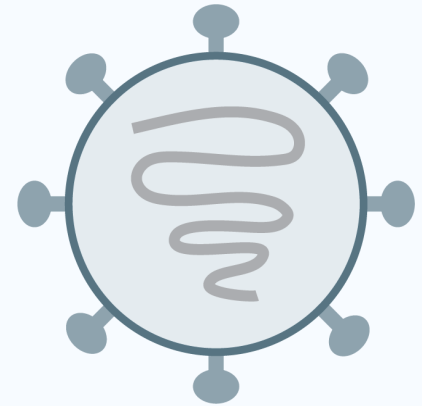
🎓 EDUCATION

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
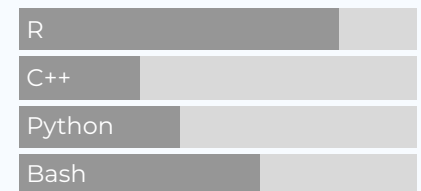
| R |
| C++ |
| Python |
| Bash |

INDUSTRY EXPERIENCE

2018
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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
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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

SERVICE POSITIONS

2018
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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

SELECTED PRESS (BY)

2019

Dr. David Mitchell[2]
RNA Society

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

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.

PUBLICATIONS

2021

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

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[4]

Nature Protocols

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

SELECTED TALKS

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
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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
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2016

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

Vanderbilt University

• T32AI11254, 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
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2021

American Society for Virology

2021
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2018

RNA Society

2020
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2016
Biochemistry Students Association
Vanderbilt University

2020
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2016
Vanderbilt Institute of Chemical Biology
Vanderbilt University

2020
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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://www.biorxiv.org/content/10.1101/2020.08.24.263418v1
4: https://www.biorxiv.org/content/10.1101/2020.04.08.032441v1