

Grayce Mores

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I am currently a fourth-year Ph. D. candidate in Biological Sciences with a concentration in Microbiology and Immunology at Northwestern University's Feinberg School of Medicine. My work focuses on *Pseudomonas aeruginosa*, a Gram-negative bacterium commonly associated with hospital-acquired pneumonia. My research is on a rare *Pseudomonas aeruginosa* infection known as Shanghai Fever, which infects the gastrointestinal tract of previously healthy children. I'm passionate about scientific communication and want to innovate how we get information from the research bench to the public. I plan to pursue a career in advanced science education, either in high school or university settings.

EDUCATION

Louisiana State University
Roger Hadfield Ogden Honors College

May 2022
GPA: 3.57

Bachelor of Science, Microbiology
Minor in Mass Communication, Political Communication focus

Member of the Tiger 12 Senior Recognition Class · LSU Dean's List · Hans and Donna Sternberg Endowed Honors Scholarship · Emmy Noether Gold Medal Award

Northwestern University, Driskill Graduate Program
Feinberg School of Medicine

Sept. 2022 - current

Ph. D. in Microbiology (anticipated 2028)

Thesis Research – Dr. Alan Hauser, Northwestern University Feinberg School of Medicine
Thesis Committee: Dr. Egon Ozer (chair), Dr. Lisa Akhtar, Dr. Larry Kaciovlek, Dr. Alan Hauser

My thesis research focuses on Shanghai fever, a rare presentation of *Pseudomonas aeruginosa* infection that occurs as a gastrointestinal infection in previously healthy infants. I plan to quantify the effector proteins of the *Pseudomonas* type III secretion system across different clinical isolates and identify genes that Shanghai fever strains use to persist in a murine model of sepsis.

GRADUATE OUTREACH

Northwestern Chicago Graduate Student Association (President) **Oct. 2022 – current**

CGSA serves the graduate students of Northwestern University's Chicago campus in areas of outreach, advocacy, academic and professional development, and social events. Responsibilities include event planning, management of a budget of \$12,000, acting as a liaison between the student body and the university, and leading meetings. I have been President of this organization since March of 2024.

Northwestern Driskill Graduate Program Student Council

Jan. 2023 – 2024

The DGP student council is responsible for bringing the concerns of students to the program administration and filling programming gaps in the areas of mentoring, social, and research activities. Responsibilities included organizing student tours, orientation events, and peer-to-peer mentoring opportunities.

High school outreach programs on Northwestern's campus

Volunteer work with Science Olympiad, NU's Sci-Hi, and CGSA-organized high school lab tours. Included event organization, grading, and serving on panels to discuss research careers and opportunities.

GRADUATE PROFESSIONAL DEVELOPMENT

Kids-Inspired Innovation in Clinical Sciences

Connects researchers with physicians to integrate bench research and clinical practice. Includes shadowing physicians in the Infectious Disease ward at Lurie Children's Hospital to learn about clinical decision-making and how doctors integrate recent research into practice.

Reflective and Effective Teaching

Engaged with recent literature on instructional methods, shadowed faculty mentors, and developed a personal teaching philosophy. Includes creating a portfolio and application materials such as sample assessments and course plans.

PRESENTATION OF GRADUATE RESEARCH

Presentation of "Characterization of Virulence Factors in Shanghai Fever Isolates of *Pseudomonas aeruginosa*" by Grayce Mores, Marine Lebrun Corbin, Sophie Nozick, Nathan Pincus, Egon Ozer, Jon Allen, Cheng-Hsun Chiu, and Alan Hauser

- Midwest Microbial Pathogenesis Conference (2023 and 2025, Chicago, IL) – poster presentation
- CPGME Pathogen Genomics Symposium (2023 and 2024, Chicago, IL) – poster presentation

PUBLICATIONS

Recently integrated *Alu* elements in capuchin monkeys: a resource for *Cebus* and *Sapajus* genomics. Jessica M. Storer, Jerilyn A. Walker, Catherine E. Rockwell, Grayce Mores, Thomas O. Beckstrom, Joseph D. Orkin, Amanda D. Melin, Kimberley A. Phillips, Christian Roos, Mark A. Batzer. 2022. *Genes*, 13:572. <https://doi.org/10.3390/genes13040572>.

SKILLS

- Molecular Biology Lab: Molecular cloning, PCR, Western blotting, qRT-PCR
- Microbiology Lab: Bacterial growth and culture, staining, quantitative techniques
- Research: Experimental design, proposal and thesis writing
- Bioinformatics: Python, C++, Linux terminal, Excel
- Writing: Political Communication, Mass Communication, Scientific Journalism
- Web Design: HTML, CSS, Wix, OU Campus
- Adobe Creative Suite: Photoshop, InDesign, Illustrator

RELEVANT COURSEWORK

- Virology (graduate)
- Advanced Microbial Pathogenesis (graduate)
- Human Anatomy and Physiology
- Computational and Mathematical Modeling
- Modern Genetics & Lab
- Advanced Microbiology Lab
- Forensic Anthropology
- Visual Communication
- Parasitology and Lab
- Microbial Physiology and Genetics
- Medical Bioethics
- Inquiry Approaches to Teaching

- Media and Science Communication
(Medill Journalism course)

UNDERGRADUATE RESEARCH EXPERIENCES

Undergraduate Researcher – Microbiology

August 2018 – May 2022

Dr. Mark Batzer – Louisiana State University, Genetics and Genomics
Funded by President’s Future Leaders in Research Award

Optimizing the bioinformatic program PolyDetect, which is used to detect the mobile genetic element *Alu* in primate species. PolyDetect uses unassembled short-read data to resolve primate evolutionary phylogenies. Current work focused on using PolyDetect to find evolutionarily significant *Alu* insertions in the *Cebidae* monkey species.

Undergraduate Researcher – Mass Communication January 2019 – September 2022

Mr. Leonard Aparcar – Louisiana State University, Political Communication

Creation and maintenance of a website focused on combating fake news. Detectfakenews.com is a resource for public education on mis/disinformation, how to spot fake news, and how people are taking action to stop the spread of misinformation.

Summer Undergraduate Research Opportunity Program June 2021 – July 2021

Dr. Hank Seifert – Northwestern University Feinberg School of Medicine, Microbiology

Insertion of a novel antibiotic resistance gene into a genetically engineered CRISPR loci in *Neisseria gonorrhoeae*. Creation of a CRISPR library of interchangeable spacer regions targeting essential genes in *N. gonorrhoeae*.

Undergraduate Researcher – Virology

June 2018 – August 2018

Dr. Gus Kousoulas – Louisiana State University, Virology

Studying Herpes Simplex Virus 1; responsibilities included daily cell culture maintenance, PCR, and gel electrophoresis.

Distinction in Biology Thesis Research

June 2017 – May 2018

Dr. Micah Luftig – Duke University, Molecular Genetics and Microbiology

Senior thesis paper, poster presentation, and lecture on “Phylogenetic Analysis of Strain Diversity of the Epstein-Barr Virus” - studying the evolutionary, geographic, and transcriptional differences between known strains using MEME Suite and CLC Sequence Viewer. Work to sequence new strains of EBV’s LMP-1 regions using plasmid cloning techniques.

UNDERGRADUATE OUTREACH EXPERIENCES

LSMSA STEMrichment Teaching Assistant

May – June 2022

Leading small group sessions on math and science study skills along with residential support for the living-learning community.

LSU Science Peer Mentor

August – December 2019

Lesson planning and student academic advising for first years in the College of Science.

LSU Honors College Advocates**October 2018 – May 2021**

Recruiting and supporting high-achieving students within LSU's Honors College.

LSU Discover Research Ambassadors**May 2019 – May 2022**

President from May 2020 – May 2021

Advise and assist students to encourage participation in undergraduate research.

LSU Distinguished Communicator Program**August 2018 – May 2022**

Curriculum requiring creation of a written portfolio and demonstration of communication skills.

LSU Distinguished Undergraduate Researcher Program**August 2018 – May 2022**

Undergraduate research curriculum culminating in a final presentation and reflection.

PRESENTATION OF UNDERGRADUATE RESEARCH

Presentation of "Discovery and Analysis of Unique *Alu* Insertions in the Capuchin Monkey Species *Sapajus apella*" by Grayce Mores, Jerilyn A. Walker, Dr. Jessica M. Storer, and Dr. Mark A. Batzer

- LSU Discover Day (2022, Baton Rouge, LA) – poster presentation

Presentation of "Optimizing the Alu Detection Program PolyDetect" by Grayce Mores, Dr. Jessica M. Storer, and Dr. Mark A. Batzer

- National Council on Undergraduate Research Conference (2021, virtual) – oral presentation
- Federation of American Societies for Experimental Biology Mobile DNA Conference (2019, Palm Springs, CA) – oral and poster presentation
- Louisiana Biomedical Research Network Conference on Computational Biology and Bioinformatics (2019, Baton Rouge, LA) – poster presentation
- LSU Discover Day (2019, Baton Rouge, LA) – oral presentation and biomedical sciences panelist

Presentation of "Modification of a genetically engineered CRISPRi locus in *Neisseria gonorrhoeae*" by Grayce Mores, Wendy Geselwitz, and Dr. Hank Seifert

- Summer Research Opportunity Program Research Symposium (2021, virtual) – oral presentation

REFERENCES

Dr. Alan Hauser – Research Supervisor, Northwestern University
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Dr. Mark Batzer – Research Supervisor, Louisiana State University
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Mr. Leonard Apcar – Research Supervisor, Louisiana State University
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Dr. David Donze – CxC Mentor, Louisiana State University
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Dr. Allison Landry – Distinction in Biology Supervisor, STEMrichment Supervisor, LSMSA
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