Joseph Serio
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EDUCATION

The University of Southern Mississippi (USM), Honors College, Hattiesburg, MS
B.S. in Biological Sciences | Chemistry minor | GPA: 3.94 | *December 2025*

RESEARCH EXPERIENCE

University of Southern Mississippi, Flynt Research Group
Research Assistant | Jan 2024 – Dec 2025 | ***Alex S. Flynt, PhD***

- Identified candidate ribonucleases regulating circRNA degradation in *Drosophila*.
- Applied GeneSwitch expression, immunostaining, confocal imaging, and RT-qPCR.
- RNA surveillance factor Rrp6 is involved in circRNA turnover; basis of Honors thesis.

Washington University in Saint Louis, Pediatric Storage Disorders Lab
Amgen Scholar | May – Jul 2025 | ***Jonathan D. Cooper, PhD***

- Characterized peripheral nerve integrity and esophageal structure in Batten disease mice.
- Conducted microdissection, histological/antibody staining, and stereomicroscopy; trained in intracerebroventricular gene therapy administration for neurological disorders (mouse).
- CLN1-deficient mice have reduced footpad innervation and the CLN3 model maintains normal esophageal structure. Manuscript in preparation, to be submitted by Jan 2026.

Donald Danforth Plant Science Center, Slotkin Lab
NSF Intern | May – Aug 2024 | ***R. Keith Slotkin, PhD***

- Investigated roles of MORC6 and MOM1 in *de novo* DNA methylation in *Arabidopsis*.
- Performed genotyping, TOPO cloning, bisulfite sequencing, and bioinformatic analysis.
- Demonstrated MORC6 participates in *de novo* methylation but is not the primary driver.

University of Southern Mississippi, Baudier Lab for Social Insect Science
Research Assistant | Oct 2022 – May 2024 | ***Kaitlin M. Baudier, PhD***

- Analyzed flight behavior of soldier castes in stingless bees (*Tetragonisca angustula*).
- Learned R-based statistical analysis, grant writing, and scientific presentation.
- Found age-dependent division of labor in guard vs. hovering soldiers; results included in ongoing manuscript.

PRESENTATIONS and PUBLICATIONS

Publications

- **Serio J**, *Neural RRP6 Depletion Drives circRNA Accumulation and Motor Impairment in Drosophila melanogaster Neurons*. Honors Thesis, University of Southern Mississippi.

Oral Presentations

- **Serio J**, Hari Sundar G V, Slotkin RK. *Roles of MORC6 and MOM1 Proteins in de novo Transgene Silencing in Arabidopsis thaliana.* Donald Danforth Plant Science Center REU Symposium (2024) .
- Serio J, Robinson K, Johnson A, Baudier KM. Flight Willingness Behavior Within the Soldier Caste of *Tetragonisca angustula*. USM Undergraduate Symposium (2023).

Poster Presentations

- **Serio J**, Ziółkowska E, Cooper JD. *Peripheral Innervation and Tissue Architecture in CLN1 and CLN3 Mouse Models of Batten Disease.* WashU Division of Biological and Biomedical Sciences Programs Summer Research Symposium (2025).
- **Serio J**, Khanal S, Flynt A. *circRNA Accumulation on Neurodegeneration and Fitness in Drosophila melanogaster.* Mississippi Academy of Sciences 89th Annual Meeting (Selected Presentation, Millsaps Symposium 2025); National Conference for Undergraduate Research (Pittsburgh, PA 2025); Mississippi Honors Conference (2025); USM Undergraduate Symposium.
- **Serio J**, Robinson K, Wu R, Johnson A, Baudier KM. *Division of Labor in Flight Behavior of Stingless Bee (Tetragonisca angustula) Soldiers.* Entomological Society of America Southeastern Branch 96th Annual Meeting (Augusta, GA 2024); Mississippi Academy of Sciences 88th Meeting (2024); USM Undergraduate Symposium (2024).

HONORS and AWARDS

External Fellowships and Scholarships

- **Barry Goldwater Scholarship** – *National award for research excellence* (2025)
- **Amgen Scholars Program,** Washington University in St. Louis – *Nationally competitive research fellowship* (2025)
- **NSF Research Experience for Undergraduates (REU)**, Donald Danforth Plant Science Center – *Nationally competitive research fellowship* (2024)

Internal Awards

- **Excellence in Research Award,** USM Honors College – *Highest-rated undergraduate Honors thesis for class of Fall 2025* (2025)
- **Honors Research Grant,** The Foundation at USM – *Competitive award supporting research presentation* (National Conference for Undergraduate Research, 2025)
- **Eagle SPUR Award,** Drapeau Center for Undergraduate Research – *Competitive award for research funding* (Mississippi Academy of Sciences 89th Meeting, 2024)
- **Dr. William G. Giles and Dr. Hannelore H. Giles Presidential Scholarship Endowment,** The Foundation at USM – *One Presidential Scholar nominated annually for outstanding research potential* (2024)
- **Eagle SPUR Award,** Drapeau Center for Undergraduate Research – *Competitive award* (Entomological Society of America Southeastern Branch 96th Meeting, 2023)
- **Presidential Scholarship,** USM Honors College – *Top merit scholarship* (2022)

Conference Awards

- **Second Place in a Poster Presentation** – Mississippi Honors Conference (2025)
- **Third Place** – Mississippi Academy of Sciences 89th Meeting (2025)
- **Drapeau Prize for Excellence in a Research Presentation** – USM Undergraduate Symposium (2024)

TECHNICAL SKILLS

Laboratory Techniques: confocal microscopy, GeneSwitch expression (*Drosophila*), ICV gene therapy delivery (mouse), Sf9 cell culture, immunostaining, microdissection, primer design, RT-qPCR

Computational/Software: ApE (A plasmid Editor), Biorender, BLAST, Python, R, SnapGene

LEADERSHIP and SERVICE

Ambassador, University of Southern Mississippi | *Sep 2024 – Present*

- Promote the School of Biological, Environmental, and Earth Sciences to prospective and current students through recruitment and community events (~6 events/semester).

Tutor & Mentor, USM Honors College Leadership Council | *Sep 2022 – Present*

- Provide individualized tutoring in science, math, Spanish, and English; Directly mentor 15 freshmen adapting to rigorous Honors coursework and life at college.

Learning Assistant, University of Southern Mississippi | *Jan 2023 – May 2024*

- Support ~100-student general chemistry lecture and small group recitation sessions.