

Gillian D. Brown

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Last updated: December 24th, 2023

EDUCATION:

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| Doctor of Philosophy (<i>in progress</i>) | Texas A&M University Graduate & Professional School Program: Microbiology Location: College Station, TX Research Advisor: Dr. Jolene Ramsey |
| Bachelor of Science, 2022 | Western Kentucky University Mahurin Honors College & Ogden College of Science and Engineering Majors: Biology, Chemistry Location: Bowling Green, KY Research Advisor: Dr. Rodney A. King Honors Thesis: " The Isolation and Characterization of Microbacteriophage Hasitha " |
| High School Diploma, 2019 | Carol Martin Gatton Academy of Mathematics and Science in Kentucky Location: Bowling Green, KY |
| High School Diploma, 2019 | Todd County Central High School Location: Elkton, KY |

PROFESSIONAL EXPERIENCE:

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| Fall 2023 | Texas A&M University. Teaching assistant for BIOL 111. |
| 2022 – 2023 | Breathitt Veterinary Center. Temporary laboratory technician in the Virology Department. Conducted diagnostic testing primarily with Chronic Wasting Disease. |
| Summer 2021 | Western Kentucky University. Paid internship (via Research and Experiential Learning Award) in the lab of Dr. Rodney A. King, WKU Biology Department. Contributed research findings to WKU honors thesis. |
| 2020 – 2021 | Gatton Academy of Mathematics and Science. Student desk attendant and interim residential counselor. |

RESEARCH EXPERIENCE:

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| 2023 – Present | Texas A&M University. PhD student in the lab of Dr. Jolene Ramsey. Studied the bacteriophage lysis mechanisms of crAss-like phages, phi6, and N4. |
| 2023 | Texas A&M University. Rotation student in the lab of Dr. Angela Mitchell, TAMU Biology Department. Studied the effect of MMR deletion on outer membrane permeability in <i>E. coli</i> . |

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| 2023 | Texas A&M University. Rotation student in the lab of Dr. Benjamin Neuman, TAMU Biology Department. Studied bioinformatic analysis of subgenomic mRNA in coronaviruses. |
| 2022 | Breathitt Veterinary Center. Part-time researcher in the Molecular Diagnostics Department under the guidance of Assistant Director Tracie Jenkins. Studied prevalence of ticks and tick-borne diseases present in Kentucky using PCR detection. |
| 2019 – 2022 | Western Kentucky University. Undergraduate researcher in the lab of Dr. Rodney A. King, WKU Biology Department. Studied alternative long-read DNA sequencing methods using the MinION device by Oxford Nanopore Technologies Inc. for potential use in WKU's SEA-PHAGES Program; studied a specific occurrence of promiscuous bacteriophage host specificity between <i>Gordonia</i> sp. and <i>Microbacterium foliorum</i> ; isolated and characterized bacteriophage Hasitha for honors thesis. |
| 2018 | Western Kentucky University. Student in a course led by Dr. Claire Rinehart, WKU Biology Department. Analyzed genomic information of bacteriophages “Adnama” and “Cici” by determining the quality of DNA sequence from the genome, defining the locations of each gene, annotating the function of those genes, and preparing the annotated genome for submission to GenBank. |
| 2017 | Western Kentucky University. Student in a course led by Mrs. Naomi Rowland, WKU Biology Department. Isolated and characterized a novel bacteriophage (“Esna”) using <i>Mycobacterium smegmatis</i> as a host. This course was the first semester of a two-part series of the HHMI SEA-PHAGES Program that guided students from bacteriophage isolation to genome annotation. |

AWARDS AND HONORS:

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| 2022 | <i>Magna Cum Laude</i> Graduate of Western Kentucky University |
| 2022 | Dr. Dan Skean Award for Outstanding Microbiology Student |
| 2021 | Gatton Academy Research and Experiential Learning Award |
| 2019 | Cherry Presidential Scholarship/Targeted Gatton Academy Graduates Scholarship |
| 2019 | Honors with Distinction Graduate of the Gatton Academy of Mathematics and Science |
| 2019 | Senator Jeff Green Scholar |
| 2019 – 2022 | President's Scholar |
| 2017 – 2020 | Dean's Scholar |

MEMBERSHIP IN PROFESSIONAL SOCIETIES:

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| 2021 – 2022 | President, WKU Microbiology Club: ASM Student Chapter |
| 2021 – 2022 | Undergraduate Student Member, Kentucky Academy of Science |

PRESENTATIONS:

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| 2022 | *WKU 52nd Annual Student Research Conference: Brown, Gillian D., King, Rodney A. "The Isolation and Characterization of Bacteriophage Hasitha" * <i>Session Winner</i> |
| 2021 | 107th Kentucky Academy of Science Annual Meeting (Virtual): Brown, Gillian D., King, Rodney A. "The Isolation and Characterization of Bacteriophage Hasitha" |
| 2019 | Small Genome Discovery Symposium: Brown, Gillian D., King, Rodney A. "Nanopore DNA Sequencing, a Novel Technology Applied to the Analysis of Newly Discovered Bacteriophages" |
| 2019 | WKU 49th Annual Student Research Conference: Brown, Gillian D., King, Rodney A. "Nanopore DNA Sequencing, a Novel Technology Applied to the Analysis of Newly Discovered Bacteriophages" |
| 2018 | WKU 38th Annual Math Symposium: Brown, Gillian D., Hoffman, Georgia A. "Traffic Simulation Coding in Mathematica" |
| 2018 | 10th Annual SEA-PHAGES Symposium: Brown, Gillian D. et al. "Features for Six Mycobacteriophage: BeeZoo (K1), Childish (B1), Kahve (B1), Priya (A9), Sandalphon (F1), and Adnama (E). |

CONTRIBUTIONS:

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| 2023 | Brown, G.D. (2023, September 18). <i>Todd County Graduate Helps Advance New Scientific Research</i> [Interview]. WEKT Radio. https://www.wektradio.com/2023/09/18/todd-county-graduate-helps-to-advance-new-scientific-research/ |
| 2022 | Brown, Gillian D., King, Rodney A. (2022). " <u>The Isolation and Characterization of Microbacteriophage Hasitha</u> : A Capstone Experience/Thesis Project Presented in Partial Fulfillment of the Requirements for the Degree Bachelor of Science with Mahurin Honors College Graduate Distinction at Western Kentucky University" (Unpublished undergraduate honors thesis). |
| 2021 | NCBI (accession <u>MZ622182</u>), July 2021: Brown, G.D. et al. " <i>Microbacterium</i> phage Hasitha, complete genome" |
| 2018 | NCBI (accession <u>MK279898</u>), December 2018: Thompson, B.A. et al. " <i>Mycobacterium</i> phage Cici, complete genome" |
| 2018 | NCBI (accession <u>MH371112</u>), May 2018: White, A.J. et al. " <i>Mycobacterium</i> phage Adnama, complete genome" |

SKILLS:

- ◆ Conducting biological research in BSL1 and BSL2 settings
- ◆ Utilizing proper aseptic technique at open benchtop and in biosafety cabinets
- ◆ Isolating bacteriophage from environmental samples
- ◆ Annotating sequenced bacteriophage genomes using PECAAN
- ◆ Operating transmission and scanning electron microscopes
- ◆ Operating light and dissecting microscopes
- ◆ Maintaining a detailed lab notebook
- ◆ Maintaining bacterial and eukaryotic cell cultures
- ◆ Performing diagnostic tests via enzyme-linked immunosorbent assays (ELISA), direct and indirect immunofluorescent tests, and viral isolation/neutralization
- ◆ Creating visually appealing research presentations and presenting research outcomes effectively
- ◆ Problem-solving and organizing
- ◆ Utilizing Microsoft Excel and Word
- ◆ Utilizing USALIMS (Laboratory Information System)
- ◆ Programming in R language (elementary level)
- ◆ Programming in Mathematica and Java (elementary level)
- ◆ Signing in American Sign Language (intermediate level)

VOLUNTEER WORK:

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| 2022 | Lions Youth Camp for Deaf and Hard-of-Hearing Children. Camp counselor. |
| 2021 – 2022 | Gatton Academy of Mathematics and Science. Alumna interviewer. |
| 2021 | Medical Center at Bowling Green. COVID-19 vaccination distribution scribe and receptionist. |
| 2018 | Norton's Children's Hospital Dance Big Red. Lock-in charity participant. |
| 2017 | BARKforLife. Dog-walker for cancer research fundraising. |

REFERENCES:

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| Primary Mentor | Dr. Rodney A. King Email: rodney.king@wku.edu Phone: (270) 745-6910 |
| Support Mentor | Dr. John Andersland Email: john.andersland@wku.edu Phone: (270) 745-5993 |
| Job Supervisor | Mrs. Tracie Jenkins Email: tjenkins@murraystate.edu Phone: (270) 881-3427 |