MELISSA J WOMACK
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Summary

Highly motivated professional who excels in a fast-paced, collaborative work environment. Self-starter with an analytical mindset and a passion for developing products that impart practical and innovative solutions. Experience with biological lab practices, quality control, database management, programming, and statistical analysis.

Skills

Microbiology	Bioinformatics	Quality Control	Python	SQL
Biochemistry	Research	OSX/Linux/Windows	Bash	NoSQL
Genomics	Pipetting	Microsoft Office	APIs	Git/GitHub

Experience

Quality Control Scientist I　　　　　　　　　　　　　　　　　　　　　November 2021 – Present
Thermo Fisher Scientific, San Diego, CA
- Performed quality control testing of in vitro diagnostic polymerase chain reaction (PCR) test cassettes, swabs, and buffers, including Stability and Validation testing
- Conducted Out-of-Specifications (OOS) investigations and initiated Non-Conformance Material Reports (NCMR)
- Supported Deviations, Change Orders (COs), and Corrective Action and Preventative Actions (CAPAs)
- Followed Good Lab Practices (GLP), Good Data Practices (GDP) and understood Good Manufacturing Practices (GMP)
- Reviewed documentation for submittal to Quality Assurance (QA)
- Proposed and implemented process improvement ideas to leadership regarding document changes and lab processes resulting in fewer errors, increased efficiency, and reduced waste
- Supported Research and Development (R&D) team in assay development for new product lines

Microbiology Technician　　　　　　　　　　　　　　　　　　　　　February 2019 – August 2019
Clinical Pathology Laboratories, Austin, TX
- Processed 200 daily clinical samples ensuring quality control to provide fast and reliable results for patients
- Ensured adherence to all safety protocols resulting in zero incidents
- Performed enzyme-linked immunosorbent assay testing for human pathogens in clinical samples
- Identified clinically relevant organisms using the MicroScan Walkaway system
- Tested for antibiotic resistance using streak plating and Kirby-Bauer disk diffusion tests

Instructional Assistant　　　　　　　　　　　　　　　　　　　　　January 2016 – December 2016
Texas State University, San Marcos, TX
- Lectured and supervised a college freshmen level organismal biology lab consisting of 20 students
- Topics included: Mendelian and population genetics, evolution, ecology, taxonomy, patterns of diversity, ecosystems and human biology, behavior, reproductive biology, and comparative physiology

Veterinary Food Inspection Specialist　　　　　　　　　　　　　　　　April 2007 – October 2015
United States Army
- Created and implemented a database facilitating inventory of over 9.3 million dollars
- Performed over 2,000 inspections of food designed for human consumption
- Supervised teams of 6 and trained teams of up to 20 bi-annually over 8 years
- Provided effective communication to facility managers, peers, supervisors, and subordinates ensuring the health and welfare of military forces
- Prepared and submitted samples for laboratory testing, ensuring quality controls as required
- Investigated unsanitary conditions in food storage facilities providing effective recommendations and guidance

- Ensured facilities adhered to food safety guidelines, documenting noncompliance, and provided recommendations for improvement
- Assisted veterinarians in remote locations with animal medicine, including administering intravenous anesthetics, vaccinations, breathing support and first aid, during humanitarian support missions

Education

Master of Science in Bioinformatics and Computational Biology   May 2021

The University of Texas at Dallas, Richardson, TX   GPA: 3.61

Bachelor of Science in Microbiology   May 2018

Texas State University, San Marcos, TX   GPA: 3.76

magna cum laude

Academic Projects

Image Analysis   August 2020 – December 2020

Medical Image Analysis Course, University of Texas at Dallas, Richardson, TX

- Collaborated in creating a method to automatically segment brain tumors from 2D multimodal MRI brain scan images using machine learning techniques implemented with Python and Matlab
- Presented findings with collaborators to professor and peers

Bioinformatics Analysis   February 2020 – December 2020

Department of Biological Sciences, University of Texas at Dallas, Richardson, TX

- Engaged in a comparative genomics study of bacterial samples from postmenopausal women with chronic or recurrent urinary tract infections to illuminate mechanisms of pathogenicity and persistence of the organisms
- Performed de novo assembly of bacterial whole genome paired end NGS data using CLC workbench
- Ensured only high-quality reads were included in data using statistical analysis
- Identified single nucleotide polymorphisms, insertions/deletions and structural variants using the command line gene annotation tool Prokka and Geneious software
- Identified plasmid genes and genes conferring antibiotic resistance using web application tools
- Presented findings in weekly project group meetings

Microbial Ecology Research   January 2017 - May 2017

Microbial Ecology Course, Texas State University, San Marcos, TX

- Proposed an original research idea that involved a competition experiment between Staphylococcus epidermidis bacteria and Malassezia spp. yeast, normally found on the human scalp, and associated with dandruff
- Conducted proposed research experiment and analyzed resulting data
- Presented results and wrote a research paper followed by a mock National Institute of Health style grant proposal

Certifications

Full Stack Web Development Certificate*,* The University of Texas at Austin   October 2018

Curriculum Included: JavaScript, HTML, CSS, Python, Flask, JSON, XML, AJAX, MySQL, MongoDB, jQuery, Node.js, React.js, REST, APIs, Materialize, Bootstrap, Responsive Web Design, Git, GitHub, Heroku