Jonah Riley Huggins

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Education

Bachelor of Science in Microbiology, Minor in Chemistry & Biological Sciences. May 2019
Clemson University - Clemson, SC

Associate in Science May 2018
York Technical College - Rock Hill, SC

Research Experience

Research & Development Microbiologist 07/2021 – Present
Diversey Holdings LLC. – Fort Mill, SC

- Test log reduction efficacy of developmental formulations against Biosafety Level 2 pathogens
- Analyze experimental data, communicating pathogen reduction results to investors
- Support both innovations and customer welfare divisions on 11 experimental projects
- Perform a variety of chemical titrations and formulations chemistry

Research Associate 05/2019 – Present
Clemson University Chemical Engineering Department – Clemson, SC

- Quantitatively optimize western blotting to allow high-throughput analysis of molecular proteomics
- Utilize 3D modeling software to design and print devices and materials used in developing the HiT-Western Array
- Design, build, and prototype custom technology to achieve desired scientific results
- Perform a variety of molecular biological tests such as ELISA, RPPA, and BCA protein assays

Laboratory Assistant / Creative Inquiry Researcher 08/2018 – 05/2019
Clemson University Chemical Engineering Department – Clemson, SC

- Performed routine lab procedures and chemical solution preparation
- Generated and maintained tissue cultures for experimental design
- Collaborated with researchers to develop a novel technique for the Mesowestern Array
- Fabricated custom technologies and equipment to functionally change modern concepts of western blotting
- Managed laboratory biohazard and chemical waste disposal

Intern Research 12/2018 – 05/2019
Clemson University Biology Department, Microbiology Division – Clemson, SC

- Conducted bioinformatic analysis of operational taxonomic units and phylotype data from Mothur
- Utilized R programming language to analyze, compare, and visualize microbiota data

Academic Experience

Extern Student 05/2018 – 08/2018
University Of North Carolina Charlotte, Bioinformatics Department – Charlotte, NC

- Studied under researchers on the Urban Environmental Genome Project
- Practiced generating heatmaps from FastQ file formats in Python
- Evaluated coursework at UNCC related to bioinformatics
- Conducted basic computational techniques of Shotgun Metagenomics in Python

Laboratory Assistant 09/2017 – 05/2018
Clemson University Biology Department, Microbiology Division – Clemson, SC

- Assisted in routine preparation of experimental control parameters and sample maintenance
- Managed and maintained hundreds of microbial cultures
- Consolidated hundreds of miscellaneous cultures down to approximately 70 viable cultures
- Cryopreserved and cataloged all viable cultures

Professional Experience

Associate Biochemist 10/2019 – 07/2021
Nutra Manufacturing Inc. | Upstate Staffing Agency – Clemson, SC

- Conducted antibody-based immunoassay testing such as ELISA, Lateral Flow Assay, and Radial Immunodiffusion to detect antigens present in health supplements
- Tested health supplements by RT-PCR for both contaminant and non-contaminant DNA material in products
- Provided lateral flow based environmental allergen testing for all productions facilities

Microbiology Laboratory Technician 07/2019 – 11/2019
Lonza | Capsugel – Greenwood, SC

- Formulated tailored microbial growth promotion serums to direct request of Microbiologists
- Conducted bioburden and sterility monitoring of prepared media formulations
- Performed routine laboratory cleaning and calibrations of all equipment necessary.

Teaching & Mentoring

COVID-19 Summer Research Challenge Mentor (Clemson University) 04/2021 – 08/2021
Clemson University – Clemson, SC

- Mentored a team of 4 students on experimental design and setup of project for COVID-19 summer research challenge
- Aided in acquisitions of materials required for experimental parameters
- Oversaw experimentation, validating procedural guidelines were followed correctly

Adjunct Laboratory Instructor
Tri-County Technical College – Pendleton, SC 08/2020 – 05/2021

- Effectively taught Biology 101 lab techniques to college students engaging in maintaining interest in laboratory lecture
- Facilitated laboratory lectures through a blended hybrid online and in-person class session managing both teaching and student-teacher discussions on laboratory materials
- Assigned and corrected educational learning materials for up to 48 students
- Provided timely feedback and guidance on materials presented during laboratory sessions

First Generation Student Mentor 01/2019 – 05/2019

- Counseled 11 first generation students on the "how-to's" of college life at Clemson University
- Helped organize social fundraisers
- Tutored first generation students in general chemistry and biology

Conferences & Programs

- National Science Foundation I-Corp Southeast Regional Program (University of Tennessee Knoxville) (2021)
- Mid-Atlantic Undergraduate Research Conference (Virginia Polytechnic Institute and State University) (2019)
- Focus On Creative Inquiry (Clemson University) (2019)

Preprints

Mesowestern Blot: Simultaneous Analysis of Hundreds of Sub-Microliter Lysates
Cameron O. Zadeh[1,*], Jonah R. Huggins[1,*], Baylee C. Westbury[1], William R. Interiano[1], Ashley Phillips[1], Cemal Erdem[1], Deepraj Sarmah[1], William B. Dodd[1], and Marc R. Birtwistle[1,#]
(Submitted to ACS on Nov. 13th, 2021)

Patents

Birtwistle, Marc., Huggins, Jonah., Zadeh, Cameron. 2021. High-Throughput Multiplexing Western Blotting Apparatus and Related Methods. U.S. Provisional Patent Application No. 63/270,436, filed October 21, 2021. Patent Pending

Technical Skills

- cGMP/GDP/GLP Trained
- Computer Aided Design/Engineering: FreeCAD, Solidworks, LibreCAD, OpenSCAD
- Programming Languages: R, HTML5, CSS3, Javascript
- Other: Linux (Debian, Ubuntu, Raspian), MacOS, WindowsOS
- "Weigh the Right Way" Certified – Mettler Toledo
- Design for Six Sigma Yellow Belt Certified

References

Marc R. Birtwistle, Ph. D. Associate Professor
Department of Chemical and Biomolecular Engineering
Clemson University
(864)-656-4557, mbirtwi@clemson.edu

Anna M. Seekatz, Ph. D. Assistant Professor
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