Darrell Robinson

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EDUCATION

Binghamton University, State University of New York - Watson School of Engineering   **Aug 2016-May 2023**

Doctor of Philosophy in Biomedical Engineering **(Masters Done Status, PhD Candidate)**   GPA: 3.40/4.00
2018-2019 Strategic Partnership for Industrial Resurgence Graduate Assistantship | 2020 AIMBE Public Policy Institute Fellowship

Huston Tillotson University - College of Natural Sciences   **Aug 2012-May 2015**
Bachelor of Science in Biology with a Minor in Mathematics   GPA: 3.80/4.00
Magna Cum Laude | National Society of Black Engineers | Beta Kappa Chi National Scientific Honor Society

TECHNICAL SKILLS AND COURSES

Software: R Program (Bioconductor, Artificial Neural Networks, Least Discriminant Analysis, Support Vector Machines, K-Nearest Neighbors, Linear Modeling, ANOVA, MANOVA), MATLAB (Graph Plotting, Fourier Transform Analysis, Medical Imaging, Exploring Differential Microarray Gene Expression Data, DNA Sequencing), Wolfram Alpha, LS-DYNA, ABAQUS Dassault Systemes, COMSOL Multiphysics, MS Office (Excel, PowerPoint, Word, Windows Media), Bioinformatics (Basic Search & Alignment Tool, Next Genome Sequencing, Genetic Expression Omnibus Databasing), OmniUpdate, Origin 7, SPSS (Linear Regression, ANOVA, MANOVA), Inteum Web Portal (Technology Transfer & Patenting), SQL, Hadoop, Spark, C, Java, Python, Automation & Software Integration: AirSlate, Zapier, CognitoForms, LearnDash, UIPath

Laboratory: Gel Electrophoresis, Cell Staining & Culturing, Macromolecule Blotting & Probing, Turbidity & Conductivity Analysis, Aseptic Techniques,, Aquatic Thermocouple Sensors, Total Viable Count, Bacteria & Bacteriological Water Analysis, Optical Spectrophotometry, Bacteria Culturing, Liquid Chromatography, Polymerase Chain Reactions,

Business: Industry Market Research, Business Summaries & Investment Pitch Decks, Business Strategy, Standard Operating Procedures, Technical Writing, Business Negotiations

Foreign Language: English (Expert), German (Intermediate), Swahili (Beginner), Spanish (Beginner), Haitian Creole (Beginner), Chinese (Beginner)

Certifications/Certificates: **2021:** Planetizen Courses - Climate Change City Planning Specialization Certification, McAfee Institute (Counterintelligence Threat Analyst), Complementary Therapists Accredited Association (Fully Accredited Criminology Diploma); **2020:** IBM Cognitive AI Class Certification Badges (SQL, Hadoop, Apache Spark), edX (C Programming - Language Foundations; Smart Cities - Management of Smart Urban Infrastructures); CourseRA (Univ Calif San Diego - Big Data Specialization, John Hopkins Univ - Health Informatics Specialization), Alison.com (Critical Infrastructures Power Supply Certificate & Business Knowledge & Business Intelligence Computer Systems Certificate); **2019:** Occupational Safety and Health Administration 10 Certification, 2019 Binghamton University Biofilm Research Center Working with Microorganisms Program, Citi Program (March 2019: Nanotechnology, Biosafety & Biosecurity, Initial Biosafety Training, Biomedical Research, Biomedical Responsible Conduct of Research); **2018:** Citi Program (Human Subjects Research - Social & Behavioral Research), Cybrary (Understanding Cloud Computing, Security Architecture Fundamentals, Intro to Cryptography), Alison.com (Business Intelligence & Knowledge Management Systems), Future Learn (Health Technology Assessment & Genetic Counseling)

PROFESSIONAL EXPERIENCE

National Black Mastermind Group   Kansas City, MO

Information Technology Director   **Sept 2021-Present**

- Creating information technology and automation workflows to enhance the business capabilities of the organization and achieve goals of advantage
- Using research and networking, we are establishing business relationships between the organization and information technology vendors to learn about the best information technology services and products
- By working remote part-time with and supervising a team of 7 professionals, our efforts and breakthroughs contributed to a 20% increase in the growth of membership of black entrepreneurs and sustainable black businesses

Chitolytic Diagnostics LLC   Toronto, Ontario, Canada

Research and Development Business Consultant   **July 2021-Present**

- Performing business strategy and product road mapping on point-of-care diagnostic technology to figure out how it can be used to improve healthcare operations and biomedical research
- Identified angel investors, investment funds, and events for the company to contact and build relationships to fundraise capital for the development of the diagnostics technology from various countries
- Working remote part-time with 2 other business development professionals, we were able to attain more interest and partnerships for the launch of the diagnostic technology with application towards COVID-19

Advisory Cloud   Virtual Remote

Company Boardroom Adviser   **Oct 2020-Present**

- Helping to perform the duties of strategic planning, operational development, intelligence research, and oversight for startup companies such as Jinfiniti Precision Medicine (Biomedical Science & Biotechnology), Quench Innovations (Water Purification & Environmental Science), Data Collaboration Alliance (Data Science and Information Technology), and Lifestyle Learning (STEM Education & Career Exploration)
- Utilizing research and industry experience to aid in operational development to increase company revenue, provide more business partnership resources, and to enhance innovation and technology product capabilities
- Worked remotely and part-time to improve the business structure, capabilities, and prospects of Jinfiniti Precision Medicine, Quench Innovations, and Lifestyle Learning to make a profitable and positive entrepreneurial impact that increased number of stakeholders

Binghamton University - Center of Biomanufacturing   Binghamton, NY

Research Assistant (Computational Systems Biology & Bioinformatics)   **Oct 2017-Present**
- Conceiving theoretical bioinformatic data science approaches to map out and analyze immune system response mechanisms based on gene expression (Sponsored by the National Science Foundation I-Corps Program)
- Examining Gene Expression Microarray Datasets from the National Biotechnology Center of Information (NCBI) with R Program (Bioconductor), Python, and MS Excel computing software to construct Bayesian Statistical Models (Clustering Dendrograms, Boxplots, Data Heatmaps, Histograms, Gene Ontology Pattern Circuits, and Gene Ratio Matrices) to predict and model the behavior of gene expression
- Meta-Analysis of multiple & related research datasets is helping track frequently expressed gene function during immune system response to multiple experimental methods based on Machine Learning Models (Artificial Neural Networks, Support Vector Machines, K-Nearest Neighbors, Least Discriminant Analysis) and helping improve precision medicine exploration/validate therapeutic application for entrepreneurial ventures
- Research supported by the National Scientific Foundation I-Corps Program & Koffman Southern Tier Incubator

Binghamton University - Department of Biomedical Engineering   Binghamton, NY

Research Assistant (Silver Zeolite Nanoparticle Treatment on Bacteria Contaminated Water)   **Aug 2018-Dec 2020**

- Conducting research by using a combined experimental approach of silver nanoparticles, zeolite rocks, dissolved oxygen, and water filter technology to effective kill and remove bacteria from contaminated water
- Using nanotechnology methods (Nanoparticle Firing, Nanoparticle Coating, Physicochemical Ion Exchange, Scanning Electron Microscopy), Water Treatment methods (Membrane Filtration), and Microbiology methods (Bacteriological Water Analysis, Total Viable Count, Bacteria Culturing, Flow Cytometry, Optical Spectrophotometry) to better understand how silver, dissolved oxygen, and zeolite rocks can effectively kill bacteria from water
- Research published in the 2020 Mid-Atlantic Technology Forum

Binghamton University - Watson Careers & Alumni Connections Office   Binghamton, NY

Career Preparation Specialist   **Jan 2018-Mar 2019**

- Addressed and strengthened resumes and cover letters for undergraduate and graduate students in the Engineering & Applied Science School through personal appointments with 4 other student assistants
- Used Microsoft Excel, Word, and OmniUpdate to archive and transform job and internship postings into newsletters and databases
- Researched information to create new resume templates, contact industry and academia professionals, and execute plans for innovative career advancement for Engineering & Applied Science students

Oak Ridge Institute for Science & Education - United States Air Force Research Laboratory - WPAFB Fairborn, OH

Research Contractor (Human Neck Finite Element Model for Injury Prediction During Aircraft Ejection)   **June 2017-Aug 2017**

- Reverse engineered older human cadaver head and neck simulation test model to create new hybrid simulation model ● Performed Finite Element Analysis on new hybrid simulation model using LS-DYNA Software and inputted Cadaver Neck Test Data for model

verification & validation
- Improved simulation and test methodology for future model projects by proposing acquisition of updated LS-DYNA software
- Summarized results in a MS PowerPoint Presentation and presented to Wright Patterson Air Force Base research staff and U.S. Military Officials during 2017 U.S Air Force Research Laboratory Summer Research Summit

ADDITIONAL EXPERIENCE

Binghamton University - Office of Entrepreneurship & Innovation   Binghamton, NY

Technology Transfer Fellow   **June 2018 - Aug 2018**

- Examined technology transfer methods and patent portfolio of the entire Watson School of Engineering & Applied Science for strategic planning & execution
- Remodeled patent portfolio in Microsoft Excel & Inteum Web Portal through performing statistical analysis and data visualization
- New portfolio helped the division to discover trends such as frequently cited patents and patent life cycle after patent application date and finalized new patent contracts bringing in more than $100,000 in funds into the office division

Research Foundation of SUNY - Upward Bound Program   Binghamton, NY

Summer Chemistry Teacher   **June 2018 - Aug 2018**
- Taught disadvantaged high school students chemistry to help improve their academic performance for college & post-high school career preparation
- Created study-learning packets, modified instructional PowerPoint presentations, and instructed students in performing chemistry experiments
- Efforts helped students improve academic performance in chemistry and increased number of students passing the science section of the New York State Regents High School Graduation Exam

Binghamton University - Department of Physics   Binghamton, NY

Research Assistant/Technology Evaluator/Technical Writer   **Nov 2017 – Feb 2019**

- Performed assisted experiments on the freezing of water from below to observe, measure, and validate the rare phenomena of upside down convection where hot water molecules come down and cold water molecules go down
- Operated Aquatic Thermocouple Sensors and used distilled water to run the convection experiments and organized the accumulated data using Origin 7 Software
- Utilized technical writing skills to explain detailed subject matter and assisted in creating the manuscript for publication in the Indian Journal of Advanced Research in Science & Engineering

Louisiana Tech University - Department of Biomedical Engineering   Ruston, LA

Research Assistant (Stem Cell Proliferation & Differentiation Through Capped Clay Nanotubes)   **Aug 2015 - Mar 2016**

- Assembled capped clay nanotubes combined with targeted stem cell hydrogels for regenerative medicine capabilities with 3 additional laboratory team members
- Investigated novel ways to proliferate and transform stem cells through Cell Staining & Culturing, Macromolecule Probing, and Chemical Distillation and Titration
- Articulated that healing factors aligned with influenced stem cells could heal bone deformities and injury sites
- Experimentation results accepted for presentation and publication at the 2016 Experimental Biology Research Conference and the 2016 Southern Biomedical Engineering Conference

PRESENTATIONS, POSTERS, PAPERS

Don Bosco Binghamton Big Data International Online Conference
"Neural Networking of Immune System Gene Expression Data: Accuracy From Occurrence, Location, and Range of Expression Levels"; Robinson, Darrell B.J., Don Bosco College of Engineering Fatorda-Goa (India) – Virtual; Presentation Recording Link: https:// binghamton.zoom.us/rec/share/xxYM3wgieeGlLLnDGVAxg7MwvX_jTW9jqAn8IzRIlfoBR2Yi5Hv_ErDcnEsH9c6n.FcHpgiMf-LCSgeXJ
                                                                                             Oct 2021

Black Sustainability Network
"H2O: Water IS Life Panel"; Robinson, Darrell B.J., 2020 Black Sustainability Summit - Virtual   *Oct 2020*

Global Genes - Rare Diseases Foundation   *"From Data to Decisions - Leveraging Genetic Data Beyond a Diagnosis"; Robinson, Darrell B.J, 2020 Global Genes Virtual Live (un)Summit - Virtual*   **Sept 2020**

National Society of Black Engineers   **Oct 2020**
"*Optimizing Deep Space Telecommunications via Optical Transceivers & Laser Technology for Martian Colonization***",** *Robinson, Darrell B.J., Holmes, Simone, NSBE Aerospace Special Interest Group, NSBE Aerospace Technical Forum - Virtual*

Binghamton University, State University of New York   Binghamton, NY
"Silver Nanoparticle Zeolites and Dissolved Oxygen Removing Aquatic Bacteria", Robinson, Darrell B.J., Mid-Atlantic Technology Forum (URL: midatlantictechforum.org)   ***Nov 2020***

"Theoretical Transformation of Bone Drug Therapeutics Using Bisphosphonates, Mesenchymal Stem Cells, Doped Hallocytes, Hydrogels, and Ceramide", Robinson, Darrell B.J., Journal of Tissue Science & Engineering (Ref # 2157-7552-10-225) **Nov 2019**

"Statistical Analysis on Catheter Length Data Based on Patient Height & Weight Without Gender, Age, or Health Condition", Robinson, Darrell B.J., SciRes Literature American Journal of Biometrics & Biostatistics   **Nov 2019**

"Monte Carlo Simulation Modeling Techniques to Measure & Understand Instrument Dead Time in PET Images", Robinson, Darrell B.J., SM Journal of Clinical and Medical Imaging   **Oct 2019**

"Experimental Investigation of Upside Down Convection and Metastable Circle Convection Cell in Water", Robinson, Darrell B.J., Brownridge, James D. Indian Jour. of Adv Research in Sci and Engin (ISSN Online: 2350-0328)   **Feb 2019**

Oak Ridge Institute for Science & Education - United States Air Force Research Laboratory   Dayton, OH
Human Neck Finite Element Model for Injury Prediction During Aircraft Ejection   **Aug 2019**
Conference Presentations & Journal Articles
● U.S. Air Force Research Laboratory Summer Research Summit (Fairborn, OH)   **Aug 2017**

Louisiana Tech University, Department of Biomedical Engineering Ruston, LA *Research Assistant (Stem Cell Proliferation & Differentiation Through Capped Clay Nanotubes)*
Conference Presentations & Journal Articles
● "Stem Cell Proliferation & Differentiation Through Capped Clay Nanotubes", Karnik, Sonali, Robinson, Darrell B.J., Mills, David; Link: https://ieeexplore.ieee.org/stamp/stamp.jsp?arnumber=7458972   **Mar 2016**
● Experimental Biology Annual Meeting Conference (San Diego, CA)   **Mar 2016**
● 32nd Southern Biomedical Engineering Conference (Shreveport, LA)   **Mar 2016**

LEADERSHIP EXPERIENCE

National Black Mastermind Group   Kansas City, MO
Information Technology Director   **Oct 2021 –Pres**
Ascension Lourdes Hospital   Binghamton, NY
Patient and Family Advisory Council (PFAC) – Pulmonary Medicine   **Sept 2021 - Pres**
Intelligence National Security Alliance   Arlington, VA
Critical Infrastructure Committee, Security Reform Committee, Legal Affairs & Cybersecurity Committee   **Nov 2020 - Pres**
Advisory Cloud   Novato, CA
Company Boardroom Adviser   **Oct 2020 - Pres**
Global Genes   Aliso Viejo, CA
Rare Disease Research & Policy Advocate   **Oct 2020 - Pres**
Black Sustainability Network
Research Adviser   **Sept 2020 - Pres**
AIMBE Public Policy Institute   Washington, DC
Research & Academic Fellow   **Oct 2019**
Graduate Student Organization   Binghamton, NY
Employment & Labor Committee/Charter & Bylaws Committee   **Oct 2017 - May 2019**
Campus Bible Fellowship   Binghamton, NY
Graduate Student Representative   **Apr 2017 - May 2018**
Universities Allied for Essential Medicines   Binghamton, NY
Graduate Student Representative/Research & Design Fellow   **Apr 2017 - May 2020**
Beta Kappa Chi National Scientific Honor Society   Austin, TX
Vice-President (Campus Chapter & Southwest Region Chapter)   **Mar 2013 - May 2015**
Golden Key International Honor Society   Austin, TX
Huston Tillotson University Chapter   **Mar 2014 - Present**
Capital Area Blood Bank of Central Texas   Austin, TX
Canteen Ambassador & Supervisor   **Feb 2012 – May 2015**
U.S. Air Force Reserve Officers Training Corps   Austin, TX
Cadet Fourth Class, Cadet Third Class, General Military Corps Commander   **Aug 2011 - Mar 2013**