

# Benjamin J. Hession

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I am an accomplished Laboratory Scientist with a Master of Science degree in Chemistry from the University of Alabama in Huntsville with experience as laboratory instructor, tutor, and mentor for undergraduate chemistry students. I have provided professional leadership to a team of laboratory technicians and delivered training to all new laboratory employees on the technology and standard operating procedures used in the lab. I have worked successfully in the fields of higher education, polymer synthesis and characterization, and immune repertoire sequencing.

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## EDUCATION

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**University of Alabama in Huntsville**, Huntsville AL  
Master of Science, Chemistry

*August 2020*

**Birmingham- Southern College**, Birmingham, AL  
Bachelor of Science, Chemistry

*May 2015*

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## TEACHING, TRAINING, AND MENTORSHIP

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### Graduate Teaching Assistant

**August 2018 – August 2020**

*Department of Chemistry, University of Alabama in Huntsville, Huntsville, AL*

- Instructed multiple general chemistry laboratory sections each semester.
- Prepared pre-lab lessons to relate topics covered in lab to both the lecture material and real-world applications.
- Delivered supplemental instruction to address difficulties experienced by students in the lecture portion of the course that prevented full comprehension of concepts covered in the lab.
- Provided training on all techniques, instrumentation, and glassware used throughout the semester using detailed explanation and demonstration.
- Utilized office hours, appointments, and email to remain available to answer student questions regarding any aspect of the course.

### Service Laboratory Team Leader

**July 2016 – January 2018**

*iRepertoire, Inc., Huntsville, AL*

- Trained and managed a seven-member team while also handling the everyday tasks of a lab technician.
- Oversaw all operations of the Service lab and took steps to improve workflow and overall customer project quality.
- Acted as the first point of contact for resolving problems and troubleshooting within the Service lab.
- Conducted weekly all-hands meetings to discuss current projects, scheduling, and lab operations.

### Chemistry Tutor

**August 2013 – May 2015**

*Birmingham-Southern College, Birmingham, AL*

- Tutored students in private, small group, and large group settings.
- Taught all aspects of undergraduate chemistry, with a primary focus on general and organic chemistry concepts.
- Independently scheduled and led tutoring and exam preparation sessions.

### Math Tutor

**February 2014 – May 2014**

*Bush Hills Academy, Birmingham, AL*

- Weekly volunteer tutoring Fifth, Sixth, and Seventh Grade math students.
- Taught basic math principles and study skills.

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**RESEARCH EXPERIENCE**

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**Graduate Researcher****December 2018 – August 2020***Scholz Lab, University of Alabama in Huntsville, Huntsville, AL*

- Master's Thesis: "Toward the Chemical Modification of Polyhydroxyalkanoates Using Click Chemistry: An Investigation of Desirable Reaction Conditions"
- Solved polymer synthesis problems encountered when functionalizing PHAs using click chemistry.
- Mentored undergraduate students conducting research projects during each semester.

**Undergraduate Research Lab Assistant****June 2014 – May 2015***Dorman Lab, Birmingham-Southern College, Birmingham, AL*

- Senior Thesis "Effects of Blood Aging on the Formal Reduction Potential of Hemoglobin"
- Worked with Scott Dorman, PhD and Rakesh Patel, PhD to determine reduction potentials of human hemoglobin at various stages of blood storage.

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**PUBLICATION AND PRESENTATION**

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**Publication****Currently in Preparation**

- Expanded on the research completed for the Master's degree requirement to include the effect of common solvents and chelating nitrogenous bases on the degree of conversion of the side chain of a PHA structural analog to the desired substrate when performing click reactions
- Appointed as lead author of the work, with assistance from Dr. Carmen Scholz, Dr. Niharika Botcha, and Dr. Anusree Mukherjee of the UAH Chemistry department.

**Poster Presentation**

- "Chemical Modification of a Polyhydroxyalkanoate Analog Using Click Chemistry," Southeastern Branch of the American Society for Microbiology, Huntsville, AL. February 21-23, 2020.

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**PROFESSIONAL EXPERIENCE**

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**Trail Crew Laborer****April 2021 – October 2021***Great Smoky Mountains National Park, Gatlinburg, TN*

- Perform all aspects of trail maintenance and construction including clearing brush and windfalls from the trail corridor, benching, removing roots and rocks from the tread surface, maintaining tread features, assisting in construction and maintenance of trail structures such as bridges and turnpikes, and maintaining backcountry cemeteries.

**Search and Rescue Technician 4 (SRT4)****May 2021 – Present***Great Smoky Mountains National Park, Gatlinburg, TN*

- Assist Park emergency medical staff by carrying equipment and supplies to the accident site for use during rescue operations. Aid in the transportation of injured patients out of the backcountry using a rescue litter.

**Production Manager****January 2018 – August 2018***iRepertoire, Inc., Huntsville, AL*

- Prepared, QC'd, and shipped all reagent kits, instruments, and other products offered by iRepertoire.
- Designed and implemented an inventory system, SOPs, product operation manuals, quality control reports, packaging materials, informational inserts, and marketing materials included with each shipment.

**Laboratory Technician***iRepertoire, Inc., Huntsville, AL***July 2015 – July 2016**

- Processed customer samples from whole blood through RNA extraction, PCR, and purification for next generation sequencing of B and T cell receptors.
- Prepared and performed quality control experiments for reagent kits and other products to be shipped to customers.
- Participated in the design and execution of internal R&D projects.
- Represented the company at scientific conferences, and assisted in designing marketing

**Quality Assurance Laboratory Intern****January 2015***Good People Brewing Company,*

- Pioneered a new internship with BSC and GPBC as a lab assistant during the January semester.
- Performed analysis of acetaldehyde and 2,3-butadione levels in product samples at various stages of fermentation.
- Cultured yeast starters and wild yeast strains for use in future production batches.

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**VOLUNTEER EXPERIENCE**

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**Judge, Senior Biochemistry Division****April 2019***Alabama Science and Engineering Fair, Regional Competition, Huntsville, AL*

- Interviewed students and collaborated with a panel of judges to provide scores for each project entered in the division.

**Science Olympiad Event Coordinator****February 2020***Alabama Science Olympiad Championship, Huntsville, AL*

- Led the “Chemistry Lab” event for high school Olympiad teams.
- Prepared materials for both the theoretical and experimental portions of the event, provided instructions and rules to be followed, and supervised students as they progressed through the event.
- Graded each portion of the event and submitted a final grade for each team to be added to their total score for the entire competition.

**Trail Care and Maintenance Volunteer****February 2020 – October 2020***Land Trust of North Alabama, Huntsville, AL*

- Assisted in work designed to decrease the negative environmental impacts of heavily trafficked hiking trails by building and rerouting trails, clearing deadfall, diverting rainwater runoff, and repairing damaged trails.

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**REFERENCES**

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**Carmen Scholz, PhD**, Professor of Chemistry  
University of Alabama in Huntsville  
256-824-6153, scholzc@uah.edu

**Miranda Byrne-Steele, PhD**  
Director of R&D & Operations  
iRepertoire, Inc., Huntsville, AL  
256-327-0948, msteele@irepertoire.com

**Joe Noletto**, Stock Room Manager  
University of Alabama in Huntsville  
256-824-6153, nolettj@uah.edu