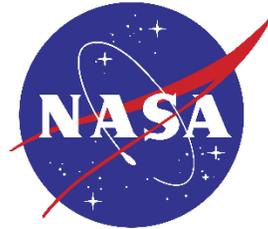




Tyler Leibengood

2020 STEM Co-op of the Year

For his outstanding experience at **NASA Glenn Research Center**



Tyler Leibengood is a fifth-year undergraduate student at Youngstown State University. He is majoring in Physics and in Mathematics. Starting in January 2020, Tyler began a spring internship at NASA Glenn Research Center. Tyler worked at the High Temperatures and Smart Alloys Branch at the center studying materials development for high temperature environments. His work was centralized around performing defect analysis of additively manufactured dispersion-strengthened high temperature alloys. Tyler resolved an ongoing mystery that began during the summer of 2019. The additive manufacturing process produced an undocumented defect in a dispersion-strengthened alloy. The origin of the defect remained undetermined until Tyler arrived. He correctly characterized the geometry of a regularly patterned defect. Following experiments designed by Tyler lead to the identification of the source of the defect, contributing a great deal to the development of the alloy. His findings are included in a manuscript currently in the process of being submitted to the Joint Army Navy NASA Air Force (JANNAF) *Journal of Propulsion and Energetics* to be published.

Tyler remains on the President's list for all his semesters of full-time enrollment at YSU. Tyler has achieved a score of 10 in the PUTNAM competition, an admirable score for the notably difficult mathematics exam. Tyler also participated twice on a team in the SIMIODE Challenge Using Differential Equations Modeling in 2018 and 2019.

He is and active member of the Youngstown State University Clarence P. Gould Honor Society, Pi mu Epsilon Ohio Xi Chapter, Robotics Club, and Society of Physics Students. Tyler is a former member of the Youngstown State University Marching Pride and former president of One Achord, a YSU student organization for barbershop and men's acapella singing.

Tyler plans on continuing his research in metallurgy while earning a PhD in Materials Science & Mechanical Engineering. Following his graduate studies, Tyler plans on seeking full-time employment at NASA through The Pathways Program.