Dr. Mark A. Tschopp
Regional Lead, ARL Central

I am the Regional Lead for ARL Central at the US Army Research Laboratory, the corporate R&D laboratory for the Army. I have previously held positions as a materials engineer, team leader, and branch chief in the Weapons and Materials Research Directorate, discovering and operationalizing science for materials in soldier, vehicle, and weapon applications. In my current role, my mission is to accelerate discovery, innovation, and transition of science and technology to the Army through forging strategic partnerships.

Education. I received my B.S. and M.S. degrees in Metallurgical Engineering from the Missouri University of Science and Technology. My DoE-funded manufacturing research uncovered the mechanisms of defect formation in the lost foam casting process, garnering the Best Paper Award at the American Foundry Society conference. I later received my Ph.D. in Materials Science and Engineering from the Georgia Institute of Technology. My NSF-funded research shed light on atomic-scale mechanisms and solid mechanics related to grain boundary-dislocation interactions in nanocrystalline/polycrystalline materials, recognized with the Sigma Xi Best PhD dissertation award and the top Engineering Mechanics student at Georgia Tech.

Prior Roles. Before joining ARL in 2012, I spent 4 years in manufacturing R&D at GM Powertrain, 2 years in high temperature material sustainability and mechanics at the Air Force Research Laboratory, and over 4 years as faculty in the Center for Advanced Vehicular Systems at Mississippi State University, where I received the Mississippi StatePride Faculty Award for excellence in research, teaching, and service.

Research. My primary research focus is accelerated materials design using a combination of modeling and simulation, data science, machine learning, and design optimization. Innovative discoveries at the intersection of these areas include nanoscale dislocation nucleation mechanisms, grain boundary structure-property relationships, ICME methodology for poly/nano-crystalline materials, constitutive model scale bridging, atomistic defects in nuclear materials, and even ML techniques for additive manufacturing, to name a few. I have published over 180 journal papers, book chapters, conference papers, and technical reports with over 4800 citations for the 100+ peer reviewed journal papers in materials science, mechanics, computational science, and design (Google Scholar, h-factor of 38). I have presented over 160 presentations and seminars, including giving over 120 invited talks/seminars at national/international conferences, universities, and other venues. I received the Silver Medal Award from ASM International in 2016 (top mid-career ASM award), the distinction of Fellow of ASME in 2017, and the distinction of Fellow of ASM International in 2018. I am driven by my passion for learning, for science, for mentorship, for working with others, and for making a broad impact for the Army.