Opportunity Title: Metals Additive Manufacturing
Opportunity Reference Code: ARL-R-WMRD-1532534783

Organization	U.S. Army
Reference Code	ARL-R-WMRD-1532534783
How to Apply	You can apply for this project directly at this link.
Description	Located at Aberdeen Proving Ground in Maryland, the U.S. Army Research Laboratory (ARL) is the Army's central laboratory. Its diverse assortment of unique facilities and dedicated workforce of government and private sector partners make up the largest source of world-class integrated research and analysis in the Army.

3D Printing, known as Additive Manufacturing (AM), is transforming the manufacturing industry. Army Research Laboratory (ARL), the nation's premier laboratory for land forces, is in the frontier of advancing innovative AM technologies and their applications. ARL is creating great strides in AM science and technology (S&T) to solve the Army challenges and mission readiness. Effective numerical and experimental methods for quantifying properties of the AM parts during the printing process are critical for enabling AM applications. Understanding the relationships between processing, microstructure, and properties of these material is critical to drive development of future metallic feedstock alloys. Alloys designed specifically for AM will give enhanced performance over today's state of the art, and enable the Soldier to adapt to evolving threats by manufacturing qualified components at the point of need while reducing logistical footprints.

This research opportunity aligns with the ARL S&T Campaign in the areas of Science of Manufacturing at the Point of Need, Lethality and Protection, and Sciences for Maneuver, in an effort to improve the performance, reliability and versatility of future Army systems.

Keywords: additive manufacturing; machine learning; materials characterization; process modeling; manufacturing science

Qualifications	Applicants should have received a M.S. or Ph.D. degree in Metallurgical Engineering, Materials Science and Engineering, Mechanical Engineering or a closely related discipline. Candidates should demonstrate a strong academic background with research experience in the following areas: additive manufacturing of metallic materials; numerical modeling of processes and materials; microstructure-processing-property-relations; powder processing (milling, sizing, compaction and sintering); machine learning and data analytics; and mechanical testing (static and dynamic) of materials. Additional experience with metallography (specimen preparation, optical and electron microscopy) and metallurgical characterization (x-ray diffraction, SEM, TEM, micro-CT, etc.) are highly desirable.

Please review eligibility for the Army Research Lab (ARL) Research Associateship Program (RAP) on the program website.

Eligibility	• **Citizenship:** U.S. Citizen Only
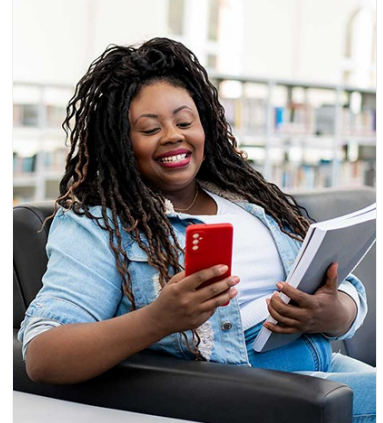
Opportunity Title: Metals Additive Manufacturing
Opportunity Reference Code: ARL-R-WMRD-1532534783

Requirements	- **Degree:** Any degree .

- **Discipline(s):**
  - **Chemistry and Materials Sciences** (1 👁)
  - **Engineering** (7 👁)
  - **Physics** (16 👁)