

Carol Scarlett is an Associate Professor at Florida A&M University (FAMU) and the Technical Officer for the National Society of Black Physicists (NSBP). Her work has largely focused on fundamental symmetries and developing experimentation and experimental methods to uncover the source of observed Dark Matter (DM) in galaxies. She has also used some of the same techniques developed for axion searches to design and test novel optical devices for the generation of random numbers using quantum effects. These techniques have formed the basis for several patents granted to Dr. Scarlett over the past five years. In 2020, Dr. Scarlett was selected as an ORISE fellow, to represent a small tech company spun out of her research, as part of a cohort of companies working at Argonne National Laboratory. In 2021, the company received support from Duality Accelerator, a Chicago based initiative to support quantum research going from lab to market in industry. In 2022, her company received further support from Luminate, a business accelerator focused on Optical Companies. All the while, Dr. Scarlett has continued research into how axionic matter, one theorized candidates for DM in the galaxy, may play a role in nuclear dynamics. Very recently, she has assembled a team of physicists from across several academic institutions, including three Historically Black Colleges and Universities (HBCUs), to apply for a National Nuclear Security Agency (NNSA) Center Grant. The team will develop a Low Energy Nuclear Science (LENS) center designed to experimentally determine if nuclear decay rates are modulated by environmental factors, as reported for several types of experiments, and to pipeline a diverse pool of talent into nuclear physics research.