## DISCLAIMER

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof. Reference herein to any social initiative (including but not limited to Diversity, Equity, and Inclusion (DEI); Community Benefits Plans (CBP); Justice 40; etc.) is made by the Author independent of any current requirement by the United States Government and does not constitute or imply endorsement, recommendation, or support by the United States Government or any agency thereof.**

**Abstract for CRADA between NETL and Louisiana State University**
**(AGMT-1472)**

The National Energy Technology Laboratory (NETL) and Louisiana State University (PARTICIPANT) will collaborate in developing and testing distributed optical fiber $CO_2$ sensors for $CO_2$ storage site monitoring. Safe and reliable monitoring of $CO_2$ storage sites and transport infrastructure is critical for ensuring the long-term effectiveness and integrity of carbon capture and storage (CCS). In this project, the objective is to develop a novel optical fiber-based distributed $CO_2$ sensor for long-term monitoring of CCS sites and $CO_2$ pipelines and also implement machine learning to automate leak and structural anomaly detection. This effort aligns with NETL's mission in reliable and sustainable energy and decarbonization.