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Abstract for an Invited Paper for the 4CF15 Meeting of the American Physical Society

The National Academy of Engineering Grand Challenges: Exciting Opportunities to Make a Difference¹ JULIA PHILLIPS, Sandia Natl Labs (retired)

Throughout human history, engineering has driven the advance of civilization. In the modern era, the Industrial Revolution brought engineering's influence to every niche of life. For all of these advances, though, the 21^{st} Century poses challenges as formidable as any from millennia past. This realization led the National Academy of Engineering to identify a list of 14 "grand" challenges for engineering for the 21st century. This list is truly grand – both inspirational and daunting– and all of us engaged in science and engineering have an exciting opportunity to tackle some aspect of them and make a difference for our world. The challenges, if met, will improve how we live. I will describe the challenges and talk about the roles the various sectors – academia, industry, and especially the national laboratories – are playing and can play in tackling these challenges. There is truly an opportunity for everyone to contribute!

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