DAVID F. TETER

MATERIALS SCIENCE & TECHNOLOGY DIVISION LEADER

LOS ALAMOS NATIONAL LABORATORY

TETER@LANL.GOV

505-665-0160

BACKGROUND

- PH.D. METALLURGICAL ENGINEERING
- 20+ YRS EXPERIENCE AT LANL
- MATERIALS ENVIRONMENTAL EFFECTS, LIFETIME AND MANUFACTURING EXPERTISE
- ADDITIVE MANUFACTURING CHAMPION AT LANL
- CO-LEAD FOR LANL MATERIALS SCIENCE STRATEGY
- DEVELOPING NEW MATERIALS AND ADVANCED MANUFACTURING PROCESSES FOR NATIONAL SECURITY AND ENRGY SECURITY MISSIONS

IMPORTANT WORK ALREADY UNDERWAY THAT WILL ENABLE THE SUITE OF ADVANCED MANUFACTURING APPROACHES FOR THE FUTURE OF CLEAN COAL AND CCUS TECHNOLOGIES

- EXTREMEMAT (XMAT) MULTI-NATIONAL LAB CONSORTIUM
  - DEVELOPING ADVANCED MODELING & SIMULATION LIFETIME PREDICTION TOOLS
  - DESIGNING NEW ALLOYS WITH IMPROVED PERFORMANCE AND LOWER COST
- HPC4MATERIALS
  - APPLYING NATIONAL LAB HPC TOOLS TO INDUSTRIAL PROBLEMS
- ADDITIVE MANUFACTURING
  - HIGH TEMPERATURE ALLOYS
  - PROCESS-MICROSTRUCTURE-PROPERTY RELATIONSHIPS
  - QUALIFICATION AND CERTIFICATION

SEED IDEAS FOR DISCUSSION TODAY: HOW DOE CAN BETTER USE THE SUITE OF ADVANCED MANUFACTURING APPROACHES IN FUTURE CLEAN COAL AND CCUS EFFORTS

- BUILD ON SUCCESS OF EXTREMEMAT AND HPC4MATERIALS
  - FRAMEWORK EXISTS FOR TAPPING IN TO THE NATIONAL LAB CAPABILITIES
- CONSIDER EXPANDING OR CREATING A NEW FUNCTION TO UTILIZE UNIQUE EXPERIMENTAL AND MANUFACTURING CAPABILITIES
  - EXAMPLE IS THE NSUF – NUCLEAR SCIENCE USER FACILTIES RUN BY DOE-NE/INL
  - "USER FACILTIY" IS ACTUALLY A NETWORK OF 8 NL, 12 UNIVERSITIES AND 1 INDUSTRY LAB
  - ENABLES UNIVERSITIES, INDUSTRY AND OTHER NATIONAL LABS TO GAIN ACCESS TO CAPABILITIES WITHIN THE "USER FACILITY" NETWORK