U.S. DOE Advanced Manufacturing Office
Workshop on Artificial Intelligence Applied to Materials Discovery and Design
August 9-10, 2017

Pittsburgh Marriott City Center

112 Washington Pl, Pittsburgh, PA 15219

AGENDA

Day 1: Wednesday, August 9, 2017	
7:00 – 8:15 am	Registration and Continental Breakfast
8:15 – 8:30 am	**Opening Remarks and Workshop Objectives** Brian Valentine, Technology Manager, Advanced Manufacturing Office (AMO)
8:30 – 9:10	**Accelerated Search for Materials via Adaptive Learning** Turab Lookman, Physics of Condensed Matter and Complex Systems Group, Los Alamos National Laboratory
9:10 – 9:50	**Analyzing large-scale data to solve applied problems in R&D** Bryce Meredig, Co-founder and Chief Scientist, Citrine Informatics
9:50 – 10:30	**The Materials Genome Initiative and Artificial Intelligence** A. Gilad Kusne, Materials Measurement Science Division, National Institute of Standards & Technology
10:30 – 10:45 am	Break
10:45 – 11:55 am	**Panel on Challenges Facing AI in Applied Materials Design** **William Peter (Moderator),** Director, Manufacturing Demonstration Facility, Oak Ridge National Laboratory **Amra Peles,** Project Lead, Pratt & Whitney **Kishore Reddy,** Research Engineer, United Technologies Research Center **Adama Tandia,** Research Associate, Corning Incorporated **Joseph Vinciquerra,** Technology Platform Leader, Additive Materials, GE Global Research
11:55 am – 12:00 pm	**Breakout Session Groups and Instructions**

	Data Quantity and Quality	Platforms and Infrastructure	AI for Materials Design in Specific Applications
	Salons 2-3 Collection, storage, sharing, and analysis of large amounts of clean, well-organized, quality data. Includes instrumentation needed for collection with the required accuracy and precision.	*Salon 4* Challenges in developing and integrating computational and design tools working across materials classes and sectors; searchable data infrastructure, ML models, algorithms, etc.	*Salon 5* Specific challenges with applying AI to materials for important industrial applications, i.e., battery materials, materials for extreme conditions, catalytic materials, etc.

12:00 – 1:00 pm	Lunch in Marquis Ballroom
1:00 – 2:30 pm	**Breakout Session 1: Future Desired Capabilities/Targets for AI in Materials Design**
2:30 – 2:45 pm	Break
2:45 – 4:15 pm	**Breakout Session 2: Technical and Scientific Challenges**
4:15 – 4:20 pm	Move to Grand Ballroom
4:20 – 4:40 pm	**Day 1 Report Outs**
4:40 –5:00 pm	**Department of Energy Perspectives on Artificial Intelligence for Materials** Dr. Mark Johnson, Director, DOE Advanced Manufacturing Office
5:00 pm	Adjourn

Day 2: Thursday, August 10, 2017	
7:30 – 8:30 am	Registration and Continental Breakfast
8:30 – 8:45 am	**Day 1 Recap** Brian Valentine, AMO Technology Manager
8:45 – 9:15 am	**Keynote Presentation** **Accelerated Materials Design and Discovery: An Industry-University Collaboration** Brian Storey, Program Officer, Accelerated Materials Design and Discovery Program, Toyota Research Institute
9:15 – 11:00 am	**Breakout Session 3: R&D Pathways and Technical Approaches**
11:00 – 11:15 am	Break
11:00 – 12:00 pm	**Breakout Session 4: Collaboration, Partnerships, and Education/Training**
12:00 – 1:00 pm	Lunch in Marquis Ballroom
1:00 – 1:45 pm	**Day 2 Report Outs**
1:45 – 2:00 pm	**Closing Session**
2:00 pm	Adjourn