

# Industrial Additive Manufacturing Workshop on **METALS AND CERAMICS**

Brookhaven National Laboratory

**April 25, 2019**

Physics, Building 510, Large Seminar Room

**8 a.m. to 5:30 p.m.**

## AGENDA:

<b>8:00</b>	Continental breakfast	
<b>8:30</b>	Welcome and Energy & Photon Sciences (EPS) overview	Jim Misewich (Associate Lab Director for EPS)
<b>8:40</b>	Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs	Manny Oliver (Director, STTR/SBIR Program Office, Department of Energy)
<b>9:05</b>	Overview of the National Synchrotron Light Source II (NSLS-II) programs and techniques	Qun Shen (Deputy Director for Science, NSLS-II)
<b>9:30</b>	High Energy Engineering X-ray Scattering (HEX) beamline for industry research	Eric Dooryhee (Diffraction and <i>In situ</i> Scattering Program Manager, NSLS-II)
<b>9:50</b>	Additive manufacturing ecosystem in New York State	Christopher Rooney (Empire State Development's Division of Science, NYSTAR)
<b>10:10</b>	Perspective and trend of the metal additive manufacturing business: from industry to defense	Shawn Kelly, Head of Additive Manufacturing Competence Center, Oerlikon
<b>10:30</b>	Coffee break	
<b>10:45</b>	Precision manufacturing applications for 3-D Printing (3DP)	Michael Hollenbeck (Chief Technology Officer, Optisys)
<b>11:05</b>	Latest development in additive manufacturing standardization	Mohsen Seifi (Director, Global Additive Manufacturing Programs, ASTM International)
<b>11:25</b>	Using rigorous measurements to guide and validate our understanding of AM processes	Lyle Levine (Project Leader, Additive Manufacturing of Metals, National Institute of Standards and Technology)
<b>11:45</b>	Advances in additive manufacturing at General Electric Research	Vipul Gupta, General Electric Research
<b>12:05</b>	Air Force research and needs in additive manufacturing metal	Air Force (to be confirmed)
<b>12:25</b>	Lunch and poster session in North Room	Networking opportunity and poster presentations on techniques and capabilities by industry and facility programs
<b>1:20</b>	Group photo	
<b>1:30</b>	Breakout round table discussions: industry needs, technical challenges, forming teams, SBIR/STTR, etc. <b>Table 1:</b> Stress/ Strain/ creep/ performance correlation - Diffraction/ scattering <b>Table 2:</b> Cracks/ Porosity/ corrosion/ surface finish/ elemental segregation/ performance correlation - Imaging/ spectroscopy <b>Table 3:</b> New emerging applications in 3DP <b>Table 4:</b> Partnering agreements with Brookhaven Lab <i>STTR/SBIR program 1:1 meetings with Manny Oliver 15 minutes each in an adjacent room from 1:30-4:30</i>	Facilitators:  <b>Table 1:</b> Eric Dooryhee (Brookhaven Lab) <b>Table 2:</b> Juergen Thieme (Brookhaven Lab)  <b>Table 3:</b> Shomeek Mukhopadhyay (Obsidian Additive Manufacturing) & Mingzhao Liu (Brookhaven Lab) <b>Table 4:</b> Erick Hunt (Brookhaven Lab)
<b>3:00</b>	Break	
<b>3:30</b>	Report from breakout session	Representatives from each table
<b>4:30</b>	Path forward	Jun Wang (Brookhaven Lab), Alessandra Colli (Brookhaven Lab), Shomeek Mukhopadhyay (Obsidian Advanced Manufacturing)
<b>4:40</b>	NSLS-II tour	Tour leads
<b>5:30</b>	Adjourn	