ERI SUMMIT

ELECTRONICS RESURGENCE INITIATIVE

& MTO Symposium

2020 Seattle, WA August 18-20

MTO

MICROSYSTEMS TECHNOLOGY OFFICE

DARPA

REINVENTING MOORE'S LAW THROUGH DESKTOP MANUFACTURING

TIMOTHY HANCOCK

DARPA / MTO
PROGRAM MANAGER

WHAT IS THIS WORKSHOP ABOUT?

Not Included

- Traditional 3D printing
- Low-end hot filament to high-end aerosol jet
- Printing metals & dielectrics
- Packaging, boards, interposers, antennas

Included

- Total cost of ownership instead of cost per transistor
- Applying desktop manufacturing to semiconductors
- Can we just shrink today's tools & processes?
- Can we make semiconductors without a traditional reactor?
- Can we activate/anneal at standard temperature & pressure?
- Can we control the selective placement of the materials?
- Can we eliminate traditional lithography & masks?

Can desktop manufacturing change the economics of semiconductor fabrication?

AGENDA

Time	Speaker	Topic
2:15 pm (15 min)	Timothy Hancock DARPA / MTO	***Introduction***
2:30 pm (25 min)	Mitchell Hsing, Inchfab	***Democratizing Micro and Nano Fabrication***
2:55 pm (25 min)	Cherie Kagan, University of Pennsylvania	***Colloidal Nanocrystal Electronics***
3:20 pm (25 min)	Rahul Panat, Carnegie Mellon University	***Ultrafast Pulsed Light Sintering of Thermoelectric Nanoparticles***
3:45 pm (15 min)	**Afternoon Break**	
4:00 pm (25 min)	Ahmed Busnaina, Northeastern University & Nano OPS	***Directed Assembly-Based Printing of Monolithic Nano and Microscale Circuits***
4:25 pm (25 min)	Benjamin Richter, Nanoscribe	***Selective Surface Functionalization via Two-Photon Polymerization***
4:50 pm (55 min)	**Panel Discussion**	