KY Nano + AM Symposium

DAY 1

"Strengthening Industry Collaborations with Academia"
Location: Speed Art Museum, University of Louisville

TIME		DATE: August 1, 2018
8:00 AM	Registration and Continental Breakfast (Atrium)	
8:30 AM	Introduction and Kickoff (Grand Hall) UofL President **Neeli Bendapudi**, Professor **Kevin Walsh** (conf chair) and Professor **Shamus McNamara** (technical chair)	
9:00 AM	Keynote Speaker (Grand Hall) *Transforming Entertainment Through 3D Printing/Additive Manufacturing/Materials into a Physical Reality* **Jason Lopes**, Production Studio Lead, Carbon	
Session 1 TIME	**Location: Grand Hall** **Additive Manufacturing and 3D Printing - Part 1** **Chair: Tim Gornet**	**Location: Speed Cinema** **Academic Interactions with Industry** **Chair: Matt Hawthorne and John Naber**
9:45 AM	*Melt Pool Analysis and Meso-Scale Simulation of Laser Powder Bed Fusion Process with Ti-6Al-4V Powder Particles* **Santosh K. Rauniyar**	*The Benefits of University Partnerships* **John Gant**
10:00 AM	*Net-Shape Ambient Temperature Metal Additive Manufacturing Using Acoustic Energy* **Anagh Deshpande**	*Commercialization Opportunities with the University of Louisville* **T. Allen Morris**
10:15 AM	*Open-Architechture Metals Additive Manufacturing: An Emerging Disruptive Influence on an Already Disruptive Technology* **Olga Ivanova**	*Industry Coop Opportunities with Academia* **Mary Andrade**
10:30 AM	*Increasing the Piezoelectric Responses of Polyvinylidene Fluroide Additively Manufactured Components* **Niknam Momenzadeh**	*Capstone Opportunities for Industry* **Erica Gabbard**
10:45 AM	*Break*	
Session 2 TIME	**Location: Grand Hall** **Nanotechnology** **Chair: Ali Oguz Er and John Balk**	**Location: Speed Cinema** **Accessing University-Affiliated Research Facilities - Part 1** **Chair: Todd Hastings and Dan Popa**
11:00 AM	*Microfabrication and Characterization of AlGaAs/GaAs heterojunction Bipolar Transistors (HBTs)* **Qingzhou Xu**	*The NSF NNCI KY Multiscale Manufacturing Site – Open for Business* **Kevin Walsh**
11:15 AM	*Characterization of Novel Microreactors for Breath Analysis* **Qi Li**	*MicroNano Technology Center* **Julia Aebersold**
11:30 AM	*Characterization of Self-Assembled Nanostructures from Evaporated Drops of Bourbon Whiskey* **Stuart Williams**	*Rapid Prototyping Center* **Tim Gornet**
11:45 AM	*Understanding the Photophysics, Synthesis, and Doping Effects of Graphene Quantum Dots* **Rosemary Calabro**	*Conn Center for Renewable Energy Research* **Thad Druffel**
Noon- **LUNCH**	*Location: Atrium and Grand Hall* Comments by UofL Speed School of Engineering **Dean Emmanuel Collins** followed by **Flash Poster Presentations**	
1:30 PM	Keynote Speaker (Grand Hall) *3D Printing at HP: Driving Manufacturing Transformation* **David Tucker** and **David Woodlock**, HP 3D Printing	
Session 3 TIME	**Location: Grand Hall** **Micro-Electro Mechanical Systems (MEMS)** **Chair: Stuart Williams and Qingzhou Xu**	**Location: Speed Cinema** **Accessing University-Affiliated Research Facilities - Part 2** **Chair: Julia Aebersold and Mahendra Sunkara**
2:15 PM	*A Microfabricated Electrochemical Sensor for Continuous, On-Site Analysis of Arsenic in Water* **Kelsey Kaht**	*The University of Kentucky Center for Nanoscale Science and Engineering (CeNSE)* **Todd Hastings**
2:30 PM	*Wireless Incontinence Monitoring System for Improved Health* **Saliya Kirigeeganage**	*The UK Electron Microscopy Center (EMC)* **John Balk**
2:45 PM	*Dimensional Dependence of X-Ray Radiation Damage in MEMS Devices* **Pranoy Deb Shuvra**	*Partnering to Develop Healthcare Technology Solutions that Improve the Lives of the Aging Population* **Pamela Adams**
3:00 PM	*Reduced-Order Dynamical Models for Microrobots Driven by Laser Light* **Zhong Yang**	*First Build, GE Appliances Co-Creation Community* **Larry Portaro**
3:15 PM	Panel Discussion (Grand Hall) *Navigating the Industry University Landscapes* Panelists: **Mehdi Yazdanpanah** (CEO of Nauganeedles), **John Naber** (Entrepreneur/UofL ECE Professor) and **Erica Gabbard** ((Director of Co-op and Industry Engagement) Moderated by **Charles Helms** (Economic Development Manager at Louisville Forward)	
4:00 PM	*Break*	
4:15 PM	Tours: MNTC, GE First Build, RPC, Conn Center	
5:00 PM	Reception, Poster Session and Networking (Atrium and Art Terrace) Introductory Comments by Louisville Mayor **Greg Fischer**	

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DAY 2

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TIME		DATE: August 2, 2018
8:00 AM	Registration and Continental Breakfast (Atrium)	
8:30 AM	Introduction (Grand Hall)	
8:45 AM	Keynote Speaker (Grand Hall) *3D Printing of Multi-Functional Structures* **Eric MacDonald**, Youngstown State University and America Makes	
Session 4 **TIME**	**Location: Grand Hall** **Additive Manufacturing and 3D Printing - Part 2** **Chairs: Tom Berfield and Tom Starr**	**Location: Speed Cinema** **BioEngineering and Life Sciences** **Chair: Jill Steinbach-Rankins and Michael Martin**
9:30 AM	*Materials and Process Design for Metal Fused Filament Fabrication* **Paramjot Singh**	*An Ultrasound-Integrated Microfluidic Platform to Enhance Intracellular Molecular Delivery* **Johathan Kopechek**
9:45 AM	*Embedding Sensing Capabilities in an FDM-Printed Object* **Garrett McGrady**	*Fast Nanoscale Imaging of Live Cells Using an Adaptive Hopping Probe Ion Conductance Microscope* **A Catalina Velez-Ortega**
10:00 AM	*Exploring Structural Metamaterials: From Single to Multiple Scales* **Li Yang**	*Structural and Functional Characterization of ATP Nanoliposomes with Potential for Accelerating Delayed Diabetic Wound Healing and Injured Spinal Cord Regeneration* **Girish Kotwal**
10:15 AM	*Mechanistic Insights of the Acid-Catalyzed Synthesis of Diphenolic Acid as a Plastic Precursor for 3D Printing Applications* **Md Shahin Rahaman**	*BAR-Encapsulated Nanoparticles against P. Gingivalis Biofilm Formation* **Mohamed Mahmoud**
10:30 AM	*Vat Photopolymerization of All-Aromatic Polyimides* **Jana Herzberger**	*Ultrasound-Enhanced Molecular Delivery to Red Blood Cells in a Microfluidic System for Dry Storage* **Emily Murphy**
10:45 AM	*Break*	
Session 5 **TIME**	**Location: Grand Hall** **Opportunities for Industry** **Chair: John Gant and Mary Andrade**	**Location: Speed Cinema** **Processing and Fabrication - Part 1** **Chair: Thad Druffel and Hui Wang**
11:00 AM	*Manufacturing Economic Growth* **Scott Herrmann**	*Laser-Assisted Micro-Patterning on NiTi Shape Memory Alloys* **Saidjafarzoda Ilhom**
11:15 AM	*Workforce Education and Training for Production of Additive Metals* **Ed Tackett**	*Ion Channels Reconstituted in Synthetic Block Copolymers* **Michael D. Martin**
11:30 AM	*Additive Manufacturing and its Economic Impact on Kentucky* **Eric Wooldridge**	*Amphiphilic Janus Gold Nanoplates for Supramolecular Assembly* **Emtias Chowdhury**
11:45 AM	*Louisville's Entrepreneurial Resources* **Lisa Bajorinas**	*Roll-to-Roll Fabrication of Solar Cells Through Process and Chemistry Engineering* **Amir H. Ghahremani**
Noon- **LUNCH**	Keynote Speaker (Grand Hall) *Merging Scales: Nanoscale Principles, Additive Technologies* **Mitchell Meinhold** CS Draper Laboratories	
1:30 PM	Keynote Speaker (Grand Hall) *Think Like an Innovator, Act Like an Entrepreneur* **Dr. Angelique Johnson** CEO/Founder of MEMStim LLC	
Session 6 **TIME**	**Location: Grand Hall** **Processing and Fabrication - Part 2** **Chair: Xiao-An Fu and Li Yang**	**Location: Speed Cinema** **Energy** **Chair: Noppadon Sathitsuksanoh**
2:15 PM	*Rapid Photonic Processing of Films in Roll-to-Roll Applications* **Thad Druffel**	*New Liquid Synthesis of Solid-State Electrolytes for the Next Generation Batteries* **Hui Wang**
2:30 PM	*Electron-Beam Induced Deposition and Etching Using Liquids: A Path to Nanoscale Rapid Prototyping with Functional Materials* **Todd Hastings**	*Novel Bio-Derived Solvents for Biofuels Production* **Anwar Hossain**
2:45 PM	*Laser Metals Additive Manufacturing Process Simulation Software Landscape* **Tim Gornet**	*Advanced Materials and Processes for Addressing Renewable Energy Challenges* **Mahendra Sunkara**
3:00 PM	Panel Discussion (Grand Hall) *Frontiers in Additive Manufacturing: 3D Printing the Human Body* Panelists: **Jerry Grant** (UofL Dental School) and **Stuart Williams** (UofL Medical School) Moderated by **Ed Tackett** (UofL Speed School of Engineering)	
3:45 PM	*Break*	
4:00 PM	Tours: MNTC, GE First Build, RPC, Conn Center	