



May 8-11, 2017 | Exhibits May 9-11
David L. Lawrence Convention Center
Pittsburgh, PA

Conference or fee registration required		Included with all registrations unless indicated	
Sunday, May 7			
1:00-4:00 PM RSNA 3D Printing Special Interest Group Meeting For more information, visit: https://www.rsna.org/3D-Printing-SIG/			
Monday, May 8			
Registration/Badge Pick-up 7:00 am – 5:00 pm			
Pre-conference Workshops 8:00 am – 1:00 pm			
Regulatory & Quality System Considerations for 3D Printed Medical Devices WORKSHOP LEADER: Janelle Schrot, Materialise INSTRUCTORS: Matthew DiPrima, Food & Drug Administration; Kim Torluemke, 3D Systems, Jenny Jones, Materialise; Beatrice Ogembo, American Preclinical Services; Gilbert Cortes, Johnson & Johnson	3D Printing in Hospitals: What You Need to Know WORKSHOP LEADER: Jonathan Morris, MD & Jane Matsumoto, MD, Mayo Clinic INSTRUCTORS: Andy Christensen, eNable; Amy Alexander, Mayo Clinic; Nicole Wake, New York University; Adam Jakus, Northwestern University	Bioprinting Fundamentals WORKSHOP LEADER: Roger Narayan, UNC/NCSU Joint Department of Biomedical Engineering INSTRUCTORS: Phil Campbell, Carnegie Mellon University; Prashant Kumta, University of Pittsburgh; Adam Feinberg, Carnegie Mellon University; Ken Church, nScrypt	RAPID + TCT Workshops of interest: <ul style="list-style-type: none"> • Fundamentals of Additive Manufacturing • Fundamentals of 3D Scanning and Modeling • Metal Part Fabrication Using Additive Manufacturing • Realizing Value with Additive Manufacturing
Facility Tours 8:00 am – 12:00 pm			
ExOne Arconic (Alcoa)			
RAPID + TCT Kickoff 1:30 pm – 5:00 pm			
SME/Additive Manufacturing Community Awards			
State of America Makes Rob Gorham, America Makes			
KEYNOTE: Networked Matter and the Nature of Things Mickey McManus, Chairman, MAYA and Research felloffice of CT/Future of learning, Autodesk			
What's New: Roundup of the Latest 3D printing and 3D Scanning Products Todd Grimm, T.A. Grimm & Associates			
PANEL: Transformation of Manufacturing Moderator: Mickey McManus, Chairman, MAYA and Research Fellow Office of CTO/Future of Learning, Autodesk Panelists: Vyomesh Joshi (VJ), President and Chief Executive Officer, 3D Systems; Stephen Nigro, President – 3D Printing, HP; Greg Morris, Additive Technologies Leader, GE Aviation; Fried Van Craen, Founder and CEO, Materialise			

Tuesday, May 9

Registration/Badge Pick-up

7:00 am – 5:00 pm

KEYNOTE and PANEL

8:00 am – 9:45 am

PANEL: New Frontiers in Metal 3D Printing

Moderator: Debbie Holton, VP Industry Strategy and Events, SME

Panelists: Ric Fulop, CEO, Desktop Metal; Kyle Nel, Founder and Executive Director, Lowe's Innovation Labs, Lowe's Companies Inc; Don Jones, Director, Global Aftermarket Parts Strategy and Transformation, Caterpillar Inc.

KEYNOTE PRESENTATION: Brilliant Factory—A New Era of Manufacturing

Philippe Cochet, Executive Vice President, GE

MMI: Clinical Applications I 10:15 am – 12:15 pm	RAPID+TCT Sessions of Interest 10:15 am – 12:15 pm	Exhibits and Other Activities
MODERATOR: Adam Jakus		
10:15 AM - 10:25 AM Low Cost and Equipment Methods to Create Flexible Anatomical Models (Novice) Joseph P. Higgins, Cardiovascular Systems Inc	Digital Thread & Standards Power Up	Exhibit Hours 10:00 am – 6:00 pm
10:25 AM - 10:45 AM Development of Low Cost Hand Prostheses by Additive Manufacturing (Expert) Jorge Lino Alves PhD & Daniel Sousa Ferreira, University of Porto / Faculty of Engineering	3D Imaging/Scanning: CT Scanning	7:00 am – 6:00 pm MMI Display
10:45 AM - 10:55 AM Additive Manufacturing of Silicone Prosthetic Implants with Heterogeneous Properties (Intermediate) Farzad Liravi & Ehsan Toyserkani PhD Peng, University of Waterloo	Post Processing I	10:30 am – 11:30 am Show Floor Tour: General
10:55 AM - 11:05 AM Development of a Custom Ankle-Foot Orthosis (Novice) Arif Sirinterlikci PhD & April Krivoniak, Robert Morris University	Materials I	10:30 am – 11:30 am Tech Briefing: 3D Scanning
11:05 AM - 11:15 AM Simulation of Coronary Atrial Intervention Challenges, Learnings, and Final Methods (Intermediate) Joseph P. Higgins Cardiovascular Systems Inc		12:30 pm – 1:30 pm Innovation Auditions
11:15 AM - 11:40 AM Using 3D Printing (Additive Manufacturing) to Produce Low Cost Simulation Models for Medical Training (Novice) Peter C. Liacouras PhD, Walter Reed National Military Medical Center, Department of Radiology		2:00 pm – 3:00 pm Show Floor Tour: Metals
11:45 AM - 12:10 PM Potential Best Use Cases for 3D Printing for Cardiothoracic Surgery (Intermediate) Justin Ryan PhD, Phoenix Children's Hospital		
MMI: Clinical Applications II 2:15 pm -4:15	RAPID+TCT Sessions of Interest 2:15 pm -4:15	Exhibits and Other Activities
MODERATOR: Janelle Schrot		
2:15 PM - 2:40 PM Retro Engineering the Feyh-Kastenbauer Retractor System for Transoral Robotic Surgery Using Surface Scanning & 3D Printing (Intermediate) Jonathan Morris MD, Mayo Clinic	3D Imaging/Scanning: Surface Scanning	2:00 pm – 5:00 pm Additive Manufacturing Standardization Forum Featuring updates from MITA (DICOM), AAMI, ASTM, ASME, AWS, SAE, and IEEE-PWG.
2:45 PM - 2:55 PM 3D Printed Wear Model to Simulate Tissue Ablation: Equipment, Materials, Technologies, and Tools Used by Interventionalists (Intermediate) Jacob Draxler & Joseph P. Higgins, Cardiovascular Systems Inc	Direct Write Printed materials/Electronics	2:30 pm – 3:30 pm Tech Briefing: Additive Manufacturing
	Post Processing II	
	Design Considerations	

Tuesday, May 9 (continued)

MMI: Clinical Applications II <i>continued</i>	RAPID+TCT Sessions of Interest <i>continued</i>	Exhibits and Other Activities <i>Continued</i>
2:55 PM - 3:15 PM Single Institution Experience in 3D Modeling of Congenital Heart Defects (Novice) Robert Wesley, Nicklaus Children's Hospital	Material properties I	3:30 pm – 5:00 pm Technology Launch Pad
3:15 PM - 3:40 PM Creation of Functional Finger Prostheses Combining 3D Printing with Traditional, Materials (Intermediate) Irene R. Healey, New Attitude Prosthetic Designs Inc		6:00 pm – 8:30 pm Welcome Event: Heinz Field (Fee required; transportation from convention center provided)
3:45 PM - 4:10 PM Separating Conjoined Twins: Applying Virtual Surgical Planning and 3D Printing (Intermediate) Hayeem L. Rudy, Albert Einstein College of Medicine; and Katie Weimer, 3D Systems - Healthcare		

Wednesday, May 10

Registration/Badge Pick-up 7:00 am – 5:00 pm		
KEYNOTE and PANEL 8:00 am – 9:45 am		
<p style="text-align: center;">KEYNOTE: New Materials for 3D Printing in Medicine: What's Next is Closer than You Think</p> <p style="text-align: center;">Ramille Shah PhD, Assistant Professor, Materials Science and Engineering, Assistant Professor, Surgery (Transplant Division), Northwestern University; and Sue Jordan MD PhD, Chief Resident – Plastic and Reconstructive Surgery, Northwestern Memorial Hospital</p>		
<p style="text-align: center;">PANEL: Medical 3D Printing Applications—Growth Beyond Surgical Guides</p> <p style="text-align: center;">Moderator: Sue Jordan MD PhD, Chief Resident – Plastic and Reconstructive Surgery, Northwestern Memorial Hospital</p> <p style="text-align: center;">Panelists: Ramille Shah PhD, Assistant Professor, Materials Science and Engineering, Assistant Professor, Surgery (Transplant Division), Simpson Querrey Institute for BioNanotechnology, Northwestern University; Carlos Carvalho, Process & Material Development, EnvisionTec; William Wagner, Director, McGowan Institute for Regenerative Medicine, Professor of Surgery, Bioengineering and Chemical Engineering, University of Pittsburgh; Fried Vancaeren, Founder, CEO, Materialise</p>		
MMI: Biomaterials 10:15 am – 12:15 pm	RAPID+TCT Sessions of Interest 10:15 am – 12:15 pm	Exhibits and Other Activities
MODERATOR: Jayanthi Parthasarathy		
10:15 AM - 10:40 AM Drug-eluting Polymeric Additive Manufacturing for Applications in Orthopaedics (Intermediate) Martin J. Petrak Peng, Precision ADM / Orthopaedic Innovation Centre; and Trevor C. Gascoyne Peng, Orthopaedic Innovation Centre	Process Monitoring, Control, and Qualification	Exhibit Hours 10:00 am – 6:00 pm
	Material Properties II	7:00 am – 6:00 pm MMI Display
	Academic research I	10:30 am – 11:30 am Show Floor Tour: General
10:45 AM - 10:55 AM 3D Printing Soft Polydimethylsiloxane (PDMS) Elastomer Toward Custom Fit Wearable Devices (Intermediate) Sara Abdollahi & Adam Feinberg PhD, Carnegie Mellon University		10:30 am – 11:30 am Tech Briefing: Additive Manufacturing
10:55 AM - 11:05 AM 3D Bioprinting Collagen Scaffolds for Engineering Human Cardiac Tissue (Intermediate) Andrew Lee & Adam Feinberg PhD, Carnegie Mellon University		11:30 am – 12:30 pm SME AM Community Panel
11:05 AM - 11:15 AM 3D Printing Collagen Type I Using Freeform Reversible Embedding of Suspended Hydrogels (FRESH) (Intermediate) Thomas J. Hinton & Adam Feinberg PhD, Carnegie Mellon University		
11:15 AM - 11:25 AM Control of Gelatin Particle Size and Uniformity to Improve Fidelity Using FRESH 3D Bioprinting (Expert) Andrew Hudson & Adam Feinberg PhD, Carnegie Mellon University		

Wednesday, May 10 (continued)

MMI: Biomaterials <i>continued</i>	RAPID+TCT Sessions of Interest <i>continued</i>	Exhibits and Other Activities <i>continued</i>
11:25 AM - 11:45 AM Additive Manufacturing of Biodegradable Photopolymers and Ceramics (Intermediate) Johannes Benedikt PhD, Lithoz GmbH		12:30 pm -1:30 pm SME MMI Theater Hour SME Medical AM/3DP Workgroup FDA/CDRH DICOM WG-17 3D Manufacturing RSNA 3D Printing SIG
11:45 AM - 12:10 PM Additive Manufacturing of Polymeric Biosensors and Drug Delivery Devices(Intermediate) Roger NarayanUNC/NCSU, Joint Departmentof Biomedical Engineering		1:00 pm – 6:00 pm Poster Session
MMI: Quality, Regulatory & Implants 2:15 pm – 4:15 pm	RAPID+TCT Sessions of Interest 2:15 pm -4:15 pm	2:15 pm – 3:15 PM Show Floor Tour: Medical Applications
MODERATOR: Roger Narayan	New Processes Power Up	
2:15 PM - 2:40 PM Quality Strategy Approach for Additive Manufacturing (Intermediate) Gilbert A. Cortes, Johnson & Johnson	Quality and Inspection	2:30 pm – 3:30 PM Tech Briefing: 3D Scanning
2:45 PM - 3:10 PM How to Get FDA Approvals for Your Additive Manufacturing Device (Expert) Satya Patloori, Deloitte LLP; and Reggie George, Johnson & Johnson	Materials II New Processes Power Up	3:30 pm – 5:00 pm Technology Launch Pad
2:45 PM - 3:10 PM How to Get FDA Approvals for Your Additive Manufacturing Device (Expert) Satya Patloori, Deloitte LLP; and Reggie George, Johnson & Johnson	Quality and Inspection	4:30 pm -5:00 pm 3D Fashion Show
3:15 PM - 3:40 PM Addressing Challenges in Custom Orthopedic Implants Using Additive Manufacturing (Novice) Maryam Jahanzad & Guha Manogharan PhD, Pennsylvania State University	Materials II	5:00 pm – 6:00 pm Show Floor Networking Reception
3:45 PM - 4:10 PM Anisotropic Behaviors of 3D Printed Dental Jaw Bone Implants (Intermediate) Xiong Yu PhD PE & Russel Wang, Case Western Reserve University		

Thursday, May 11

Registration/Badge Pick-up

7:00 am – 1:00 pm

KEYNOTE and PANEL

8:00 am – 9:45 am

PANEL: So Where Do We Go from Here?

Moderator: James Woodcock, Head of Content, The TCT Group

Panelists: Mark Cotteleer, Managing Director, Deloitte; Todd Grimm, President, T. A. Grimm & Associates, Inc; Graham Tromans, Owner and Principal Industry Consultant, GP Tromans Associates; Robin Wilson, Head of Manufacturing, Innovate UK

KEYNOTE: The Future of Additive Manufacturing and 3D Printing

Terry Wohlers, Principal Consultant and President, Wohlers Associates, Inc.

Thursday, May 11 (continued)

MMI: Metals 10:15 am – 12:15 pm	RAPID+TCT Sessions of Interest 2:15 pm – 4:15 pm	Exhibits and Other Activities
MODERATOR: Alejandro Espinoza	Material Properties III	Exhibit Hours 10:00 am – 2:00 pm
10:15 AM - 10:40 AM Additive Manufacture of Stiffness Matched Skeletal Fixation Devices (Expert) David Dean PhD, The Ohio State University	Materials III Material Properties III	7:00 am – 2:00 pm MMI Display
10:45 AM - 11:10 AM Design Considerations and Capabilities for Implants Manufactured with Integrated Porous Structures (Intermediate) Oscar Hedin, Arcam AB	Materials III	10:15 am – 11:00 am Tech Briefing: 3D Printing in Medicine
11:15 AM - 11:40 AM Different Metal Additive Manufacturing Laser Methods Compared to EBM for Serialized Production of Orthopedic Implants (Intermediate) Emanuele Magalini, Eurocoating s.p.a.		11:00 am – 12:00 pm Show Floor Tour: Medical Advancements
11:45 AM - 12:10 PM Effect of Powder Morphology on Mechanical Properties of Cobalt-Chrome Alloy for the Dental Industry by Laser Powder Bed Fusion (Intermediate) Ivy Li CMfgE, Material Technology Innovations Co Ltd		11:30 am – 12:30 pm Technology Launch Pad
Facility Tours 1:00 pm – 4:00 pm	1:00 pm – 5:00 pm SME Medical Additive Manufacturing 3D Printing Workgroup Meeting	
Arconic (Alcoa) Bally Design/MAYA Design	Additional registration (no fee) required REGISTER HERE: www.sme.org/medical-am3dp-workgroup	