



NSF Manufacturing Blue Sky Competition and SME David Dornfeld Manufacturing Vision Award

Wednesday, June 23, 2021
12:00 PM – 3:00 PM Eastern Time

<https://www.sme.org/aboutsme/awards/blue-sky-competition/>

The aim of this annual competition is to influence the future of manufacturing research and education in the United States through new, visionary ideas of the future. Such visionary ideas are often described as “radical,” “outrageous,” “transformational,” “unconventional,” “convergent,” and “breakthrough.” Presentations should pose grand challenges to be addressed by pursuing the manufacturing research vision, describing the intersections between disparate disciplines necessary to advance that vision. Topical areas should extend beyond the scope of a single investigator and show potential for transformative impact in areas of interest to federal agencies.

2021 Finalists

Eastern Time	Abstract Title	Abstract Authors
12:00 - 12:20	Physics Aware Machine Learning Surrogates for Real-Time Digital Twin in Additive Manufacturing	Baskar Ganapathysubramanian; Soumik Sarkar; Aditya Balu; [Iowa State University]
12:20 - 12:40	Manufacturing In-Vitro Living Neural Computing Chips for Efficient AI Learning and Computation	Binil Starly [North Carolina State University]
12:40 - 13:00	There Is Only One Existential Threat. Let's Talk About It.	Carly Gayle [International Society for Ecology and Culture]; Carol Handwerker [Purdue University]; Frank Gayle [NIST]
13:00 - 13:20	Product in a Patient: In Vivo Surgical Manufacturing	Michael McPhail; Juergen Neubauer; David Lott [Mayo Clinic]
13:30 - 13:50	Convergent Systems of Systems Manufacturing (Convergent SoS Manufacturing)	Mihaela (Miki) Banu; Albert Shih; Alan I. Taub; Bogden I. Epureanu [University of Michigan]
13:50 - 14:10	From Self-Aware to Self-Healing for "Perpetual" Manufacturing	Noel Greis [North Carolina State University]
14:10 - 14:30	Self-sensing Smart-connected Products in Smart Manufacturing Systems	Thorsten Wuest [West Virginia University]; Juergen Lenz [INNEO Solutions]; Eric MacDonald [UT El Paso]; Ramy Harik [University of South Carolina]
14:30 - 14:50	Lifelike metallic structures using Origami & Compliant Mechanism	Vanshika Singh [University of Tennessee Knoxville]; Suresh Babu [University of Tennessee, Knoxville; Oak Ridge National Laboratory]; Michael Kirka [Oak Ridge National Laboratory]

Selection Committee: <https://www.sme.org/aboutsme/awards/blue-sky-competition/david-dornfeld-manufacturing-vision-award-selection-committee-members/>

The winner of the 2021 SME David Dornfeld Manufacturing Vision Award will be announced at the SME Awards Ceremony on Thursday, June 24, 2021 at 3:00 PM Eastern Time.

Competition Organizers:

- Professors Frank Pfefferkorn (frank.pfefferkorn@wisc.edu)
- ZJ Pei (zipei@tamu.edu)
- Tony Schmitz (tony.schmitz@utk.edu)