



*1st nanoMFG Node Workshop on
Data-Science Enabled Advances
In Nanomanufacturing
(DSEAN)*



REVIEW OF DAY 1 & DAY 2 OVERVIEW

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*1st nanoMFG Node Workshop on Data-Science Enabled Advances In
Nanomanufacturing (DSEAN)*

February 26-27, 2019 (Urbana, IL)

<http://nanomfgnode.illinois.edu/>

nano**MFG**



Please take a few minutes to complete the following survey assessing the needs for development of computational modeling and simulation tools for nanomanufacturing processes. Your suggestions will enable us to identify, prioritize and develop the most useful software tools and make them available to the nanomanufacturing community through the NCN. The first 150 people to complete the survey are eligible for a \$10 gift card. Thank you!

https://uncg.qualtrics.com/jfe/form/SV_73te6M511kRKm7r

February 26, 2019

NCSA Room 1040

(See WebEx information at the bottom of the agenda)



SOME DAY 1 HIGHLIGHTS



- ❑ Data science could/should play a role in nanomanufacturing
- ❑ Ferreira → Create “cyber(nano)manufacturing” infrastructure brings tool in the loop for data extraction/monitoring
- ❑ Ager → Demonstrated use of machine learning (applied to 4D STEM data) to go from “bespoke” 2D materials (MoS_2) to nanomanufacturing of 2D materials
- ❑ Shi → It is possible to adapt appropriate data-science tools to enable in situ monitoring (Raman metrology) of a nanoMFG process (R2R nano Buckypaper)



SOME DAY 1 HIGHLIGHTS



- ❑ Chaudhuri → To cross mesoscale for scalable nanoMFG, we should think of “manufacturing science”
- ❑ Foster → MDF can take your data and extract metadata; platform facilitates data sharing
- ❑ Cragin → MBDH has various priority/interest areas (including manufacturing); spoke awards facilitates formation of partnerships



TODAY'S AGENDA (DAY 2)



[9:00am] "Panel discussion: The role of data at nanofabrication facilities"



Oliver Brand (Ga. Tech)



Mauro Sardela, Jr. (U. Illinois)



Kevin Walsh (U. Louisville)



William L. Wilson (Harvard)



Klara Nahrstedt (U. Illinois)

[10:00am] "Real-Time Micro-service Operating Infrastructure for Scientific Workflows"



Chenhui Shao (U. Illinois)

[10:30am] "Process capability analysis for two photon lithography using 3D geometric data"



TODAY'S AGENDA (DAY 2)



[11:00am]

Coffee Break!!



Sam Tawfick (U. Illinois)

[11:15am] “Gr-ResQ: Graphene Processing and Analysis Data”



Sam Tawfick (U. Illinois)

[11:45am] “Working lunch on position paper and concluding remarks”



[1:30pm]

Departure!!





ACKNOWLEDGEMENTS



Jay Roloff (NCSA)



Leatitia J Soliday (NCSA)

