

SVC Meeting Agenda, 28-29 March 2019

Twelfth Semi-Annual Spring 2019 Project Review & IAB Meeting
NSF IUCRC Smart Vehicle Concepts Center <www.SmartVehicleCenter.org>
Hosted by The Ohio State University
Location: E100 & E525 Scott Laboratory, 201 West 19th Avenue, Columbus, OH 43210

DAY 1: Thursday, 28 March 2019 (Room: E100)

OPEN SESSION for Registered Participants

9:45a – 11:30a	Registration
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9:00a – 11:00a	Lab tours and individual research meetings (upon request)
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11:30a – 1:00p	Lunch session	
11:30a	MAE Chair's welcome remarks and introduction	V. Subramaniam
11:45a	Special keynote presentation	D. Houser (OSU)

1:00p – 2:00p	Overview of center activities	Presenter(s)
1:00p	Welcome and state of the center	M. Dapino (OSU)
1:30p	Overview of Industrial Advisory Board meetings and award presentations	R. Hahnen (Honda R&D)
1:45p	NSF IUCRC Program	A. Marshall (NSF)
1:55p	L.I.F.E. forms	V. Hill (VentureWell)

2:00p – 2:30p	Break (coffee and soft drinks) and student posters
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2:30p – 4:00p	Emerging trends in smart vehicle research (SVC Research Seed Program and SVC REU Program updates)	Presenter(s)
2:30p	Integrated hyperdamping material systems for vibration, noise, and shock attenuation applications	R. Harne
2:45p	On the feasibility of a temperature state observer for powder bed fusion additive manufacturing	D. Hoelzle
3:00p	Aeromechanic analysis and optimization of boundary layer ingestion turbomachinery	J. P. Chen
3:15p	Investigation of metal corrosion by in-situ electrochemical force microscopy	H. Cho
3:30p	Solution processing of thermochromic vanadium dioxide smart windows	V. Doan-Nguyen
3:45p	Member's perspective	T. Greetham (Moog)

4:15p – 5:30p	Student posters continued and informal meetings between sponsors and students/researchers
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5:30p	Adjourn: Non-IAB member may visit the labs and interact with students and researchers upon request
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5:45p – 7:15p INDUSTRIAL ADVISORY BOARD (IAB) MEETING – Session I (dinner provided) (Room: E525)

Agenda:

- Minutes of September 2018 Meeting and action items
- Update on Outstanding Student Presentation Award
- Autumn 2019 meeting dates

7:15p – 7:45p Executive session (IAB and NSF only)

DAY 2: Friday, 29 March 2019 (Room: E100)

CLOSED SESSION for SVC Sponsors & Invited Observers only

8:00a – 8:15a	Breakfast (coffee and bagels) & Registration (if not present on Day 1)
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Time	Topic	Organization	Presenter(s)
8:15a – 8:30a	Project topics, leaders, and mentors	OSU	V. Sundaresan
	Project evaluations (L.I.F.E. forms)	VentureWell (NSF Assessment Coordinator)	V. Hill

L.I.F.E. Form Website: <http://iucrc.com/> Password: to be provided



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8:30a - 9:30a	Technical Session I: (FOR SVC MEMBERS ONLY) <i>Moderated by P. Vijayaraghavan</i>	Presenter(s)	SVC#	Project Leader(s)	Mentor(s) (Organization)
8:30a	Characterization and modeling of passive and adaptive bushings and mounts: Nonlinear isolator dynamics	R. Singh	#40F	R. Singh	Y. Zhang, C. Maranville (Ford)
8:50a	Mechanoluminescent paintable light sources in automotive lighting systems	S. Krishnan (G)	#46	V. Sundaresan	D. Detwiler, N. Verwys (Honda R&D)
9:10a	Embedded fiber optic sensors for structural health monitoring	S. Chilelli (G)	#49	M. Dapino	T. Greetham (Moog)

9:30a	Break (coffee and soft drinks) / student posters
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10:10 - 11:30a	Technical Session II: (FOR SVC MEMBERS ONLY) <i>Moderated by S. Chillara</i>	Presenter(s)	SVC#	Project Leader(s)	Mentor(s) (Organization)
10:10a	Ultrasonic additive manufacturing for automotive structures: UAM process modeling UAM for structural reinforcement UAM steel builds (New)	G. Venkatraman (G) Y. Rong (G) T. Han (G)	#51B #51C #51D	M. Dapino, B. Gingerich, L. Headings	J. Carlidge (Battelle) R. Hahnlen (Honda R&D) R. Hahnlen (Honda R&D)
10:40a	Design of matrix and particulates for Simulcure 3D printing technique	P. Vijayaraghavan	#52	V. Sundaresan	M. Mallamaci (Parker Hannifin)
11:00a	Robust Integrated Magnetic Composites (RIMaC) for magnetic gears: Magnetic Additively-Manufactured Structural Hybrid (MASH) Magnetic Gear Drives (MGDs) for automotive applications	I. Nas (G), B. Losey (G)	#54A #54B	M. Dapino	V. Asnani, J. Scheidler (NASA) R. Hahnlen (Honda R&D)

11:45a	Working lunch
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12:30p - 1:30p	Technical Session III: (FOR SVC MEMBERS ONLY) <i>Moderated by L. Headings</i>	Presenter(s)	SVC#	Project Leader(s)	Mentor(s) (Organization)
12:30p	Flexible piezoelectric sensors for vehicle applications	A. Ramanathan (G)	#57	M. Dapino L. Headings	U. Gandhi (Toyota)
12:50p	Optical multifunctional materials – Architectures for structural sensors: Architecture for mechanoluminescent structural sensors and sensing platforms	P. Vijayaraghavan, S. Gupta (G)	#58A	V. Sundaresan	D. Detwiler, A Sheldon (Honda R&D); G. Roberts, S Miller (NASA)
1:10p	Photoluminescent phosphors for visualizing thermomechanical stress in power electronic devices (New)	V. Venkatesh (G), S. Sajid (U)	#58B		S. Joshi (Toyota)

Key: G - Graduate Student; U - Undergraduate Student

1:30p Closed Session Adjourns

(IAB members should go to E525. Non-IAB members may move to labs to talk with students.)

1:30p - 3:00p INDUSTRIAL ADVISORY BOARD (IAB) MEETING SESSION II (in E525)

Agenda:

- Center operations – Marcelo Dapino
- L.I.F.E. form summaries and discussion – Victoria Hill
- Members' perspective
- Action items and adjourn