SVC Meeting Agenda, 19-20 September 2019

Twelfth Annual Autumn 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, 19 September 2019 (Room: E100)  OPEN SESSION for Registered Participants

9:45a – 11:30a  Registration

9:00a – 11:00a  Lab tours and individual research meetings (upon request)

11:30a – 1:00p  Lunch session
   11:30a  MAE Associate Chair’s welcome remarks and introduction  R. Siston
   11:45a  Special keynote presentation  TBD

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

2:00p – 2:30p  Break (coffee and soft drinks) and student posters

2:30p – 4:00p  Emerging trends in smart vehicle research
   (SVC Research Seed Program and SVC REU Program updates)
   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  J. Cartlidge (Battelle)

4:15p – 5:30p  Student posters continued and informal meetings between sponsors and students/researchers

5:30p  Adjourn: Non-IAB member may visit the labs and interact with students and researchers upon request

5:45p – 7:15p  INDUSTRIAL ADVISORY BOARD (IAB) MEETING – Session I (dinner provided) (Room: E525)
   Agenda:
   • Minutes of March 2019 Meeting and action items
   • Update on Outstanding Student Presentation Award
   • Spring 2020 meeting dates

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

DAY 2: Friday, 20 September 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)

<table>
<thead>
<tr>
<th>Time</th>
<th>Topic</th>
<th>Organization</th>
<th>Presenter(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:15a – 8:30a</td>
<td>Project topics, leaders, and mentors</td>
<td>OSU</td>
<td>V. Sundaresan</td>
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<td></td>
<td>Project evaluations (L.I.F.E. forms)</td>
<td>VentureWell (NSF Assessment Coordinator)</td>
<td>V. Hill</td>
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L.I.F.E. Form Website:  http://iucrc.com/  Password: to be provided
### SVC Meeting Agenda, 19-20 September 2019

#### 8:30a - 9:30a  
**Technical Session I: Moderated by P. Vijayaraghavan**

<table>
<thead>
<tr>
<th>Time</th>
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<th>Project Leader(s)</th>
<th>Mentor(s) (Organization)</th>
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</thead>
<tbody>
<tr>
<td>8:30a</td>
<td>Characterization and modeling of passive and adaptive bushings and mounts: Nonlinear isolator dynamics</td>
<td>R. Singh</td>
<td>#40F</td>
<td>R. Singh</td>
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<tr>
<td>8:50a</td>
<td>Mechanoluminescent paintable light sources in automotive lighting systems</td>
<td>S. Krishnan (G)</td>
<td>#46</td>
<td>V. Sundaresan</td>
</tr>
<tr>
<td>9:10a</td>
<td>Embedded fiber optic sensors for structural health monitoring</td>
<td>M. Dapino</td>
<td>#49</td>
<td>M. Dapino</td>
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#### 9:30a  
**Break (coffee and soft drinks) / student posters**

#### 10:10a - 11:30a  
**Technical Session II: Moderated by S. Chillara**

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<tr>
<td>10:10a</td>
<td>Ultrasound additive manufacturing for automotive structures: UAM process modeling UAM for structural reinforcement UAM steel builds</td>
<td>G. Venkatraman (G) Y. Rong (G) T. Han (G)</td>
<td>#51B</td>
<td>M. Dapino, B. Gingerich, L. Headings</td>
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<tr>
<td>10:40a</td>
<td>Multifunctional structural polymer composites for vehicle electrification</td>
<td>P. Vijayaraghavan</td>
<td>#52</td>
<td>V. Sundaresan</td>
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<tr>
<td>11:00a</td>
<td>Robust Integrated Magnetic Composites (RIMaC) for magnetic Magnetic Additively-Manufactured Structural Hybrid (MASH) Magnetic Gear Drives (MGDs) for automotive applications</td>
<td>I. Nas (G), B. Losey (G) M. Moore (U)</td>
<td>#54A</td>
<td>M. Dapino</td>
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#### 11:45a  
**Working lunch**

#### 12:30p - 1:30p  
**Technical Session III: Moderated by L. Headings (FOR SVC MEMBERS ONLY)**

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<tr>
<td>12:30p</td>
<td>Flexible piezoelectric sensors for vehicle applications</td>
<td>A. Ramanathan (G)</td>
<td>#57</td>
<td>M. Dapino L. Headings</td>
</tr>
<tr>
<td>12:50p</td>
<td>Optical multifunctional materials – Architectures for structural sensors: Architecture for mechanoluminescent structural sensors and sensing platforms</td>
<td>S. Gupta (G), A. Mohamed (U)</td>
<td>#58A</td>
<td>V. Sundaresan, P. Vijayaraghavan</td>
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<td>1:10p</td>
<td>Photoluminescent phosphors for visualizing thermomechanical</td>
<td>V. Venkatesh (G), S. Krishnan (G)</td>
<td>#58B</td>
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#### 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’ perspectives
- Action items and adjourn