

Welcome!

JAMS/AMTAS Fall 2011 Meeting

Edmonds Conference Center

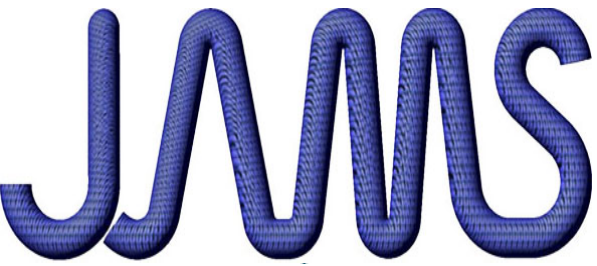
1 November 2011



Introduction

Background

- The FAA Joint Advanced Materials and Structures (JAMS) Center of Excellence was formed in late 2003 and consists of two university teams:
 - AMTAS ('A' dvanced 'M' aterials in 'T' ransport 'A' ircraft 'S' tructures)
 - CECAM ('Ce' nter for 'C' omposites and 'A' dvanced 'M' aterials)
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JAMS CoE Member Schools

AMTAS (Advanced Materials for Transport Aircraft Structures)

- University of Washington, Lead
- Washington State University
- Oregon State University
- Edmonds Community College
- Florida International University
- University of Utah



CECAM (Center for Composites and Advanced Materials)

- Wichita State University, Lead
- Northwestern University
- Purdue University
- Tuskegee University
- University of Delaware
- University of California at Los Angeles





AMTAS Administration

- Curt Davies (FAA W. J. Hughes Research Center, New Jersey) is JAMS Program Manager
 - FAA Technical Monitors: Allan Abramowitz, Curt Davies, Lynn Pham, Dave Westlund
 - Larry Ilcewicz, FAA NRS, Composites (Renton) also helps guide all AMTAS projects
 - UW-AMTAS:
 - Prof. Mark Tuttle, AMTAS Director
 - Prof. Kuen Lin, AMTAS Co-Director
 - Ms. Ellen Barker, Assistant to the Director
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JAMS/AMTAS Meetings

- Annual JAMS meetings
 - Held during spring (~ April)
 - Speakers from all 12 JAMS universities
 - The two lead universities (UW and WiSU) take turns organizing and hosting
 - 2011 JAMS Meeting: 20/21 April, held in conjunction with Aircraft Airworthiness & Sustainment (AA&S) Conference , San Diego
 - 2012 JAMS Meeting: will be held in conjunction AA&S Conference, 2-5 April, Baltimore (details of JAMS '12 Meeting TBD)
 - Annual AMTAS meetings
 - One-day mtg, held during autumn (~ Nov) in the Pacific Northwest
 - Speakers from 6 AMTAS universities (occasional guest speakers)
 - 85 registrants for today's meeting
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JAMS/AMTAS Meetings

- Agendas and presentations from all past JAMS-AMTAS meetings are available from the AMTAS website:

<http://depts.washington.edu/amtas/>

(follow link to “Events”)

- Summary and presentations from the meeting today will be posted by early next week (e-mail will be sent when site is updated)
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Short Course on Advanced Composites

- Comprehensive five-day (40-hr) short course developed by AMTAS participants and offered several times on the UW campus
 - ~10 instructors (~5 from academia, ~5 from industry)
 - Difficult to schedule
 - Expensive for participants
 - 2.5-day (i.e., less comprehensive) course has been developed based on existing course materials; will be delivered at NASA-Kennedy Space Center next week for first time
 - Mark Tuttle is instructor
 - ~30 pre-registrants
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Special thanks to..

- The Boeing Company



- Our many additional industrial partners, particularly

- Hexcel Corporation



- Cytec



- Toray



- General Plastics



- Intec



Special thanks to..

- The University of Washington:
 - Provost Office
 - College of Engineering
 - Department of Aeronautics and Astronautics
 - Department of Materials Science and Engineering
 - Department of Mechanical Engineering
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Meeting Agenda

Early Morning Agenda

- 8:30-8:45 am: Welcome/AMTAS Updates Mark Tuttle, UW
 - 8:45-10:15 am: Session I
 - 8:45-9:00 • Effect of Surface Contamination on Composite Bond Integrity and Durability Tomas Pribanic/
Dwayne McDaniel, FIU
 - 9:00-9:05 *Discussion*
 - 9:05-9:20 • Improving Adhesive Bonding of Comp. through Surface Characterization Ashley Tracey/
Brian Flinn, UW
 - 9:20-9:25 *Discussion*
 - 9:25-9:40 • Durability of Adhesively Bonded Joints for Aircraft Structures Dan Adams, U of U
 - 9:40-9:45 *Discussion*
 - 9:45-10:15 *Industry Feedback* Kay Blohowiak,
The Boeing Co.
 - 10:10-10:30 am - Coffee Break
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The Meeting Today

Mid-Morning Agenda

- 10:30am-12:00 pm – Session II

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|-------------|---|---------------------------------|
| 10:30–10:45 | • Failure of Notched Laminates under Out-of-Plane Bending | John Parmigiani, OSU |
| 10:45–10:50 | <i>Discussion</i> | |
| 10:50–11:05 | • Probabilistic Fracture Analysis of Disbond/Delamination Arrest with Fasteners in Composite Structures | Chi Ho Cheung/
Kuen Lin, UW |
| 11:05–11:10 | <i>Discussion</i> | |
| 11:10–11:25 | • Development and Evaluation of Fracture Mechanics Test Methods for Sandwich Composites | Dan Adams, U of U |
| 11:25–11:30 | <i>Discussion</i> | |
| 11:30–12:00 | <i>Industry Feedback</i> | Gerry Mabson,
The Boeing Co. |

- 12:00-12:45 pm - Lunch

The Meeting Today

Afternoon Agenda

- 12:45-2:15 pm – Session III

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|-------------|--|---|
| 12:45–1:00 | • Certification of Discontinuous Composite Material Forms for Aircraft Structures | Mark Tuttle, UW |
| 1:00–1:05 | <i>Discussion</i> | |
| 1:05–1:20 | • Development of a recommended test/analysis correlation protocol for airframe crashworthiness certification | Paolo Feraboli, UW |
| 1:20–1:25 | <i>Discussion</i> | |
| 1:25–1:40 | • Laser Ultrasonics for High-speed Evaluation of Composite Parts | Jinjun Xia & Chen-wei Wei, UW |
| 1:40–1:45 | <i>Discussion</i> | |
| 1:45–2:15 | • FAA Safety Awareness Course Developments | Larry Ilcewicz, FAA & Goran Fernlund, Convergent Man Tech |
| 2:15–2:45 | <i>Industry Feedback</i> | Mostafa Rassaian, The Boeing Co. |
| 2:45–3:00pm | – Wrap up/Adjourn | Mark Tuttle, UW |

- Please participate in the discussion throughout the day!!!
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 - Comments or Questions before we begin?
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