

*Welcome!*

JAMS/AMTAS Fall 2012 Meeting

HUB Lyceum, University of Washington  
31 October 2012

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# Introduction

## *Background*

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- 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

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## 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

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- Curt Davies (FAA W. J. Hughes Research Center, New Jersey) is JAMS Program Manager
  - FAA Technical Monitors – AMTAS projects (New Jersey): Allan Abramowitz, Curt Davies, Dave Galella, Lynn Pham, Dave Westlund
  - Larry Ilcewicz, FAA CSTA, 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

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- Annual JAMS meetings
    - Held during spring (~ March-June)
    - Speakers from all 12 JAMS universities
    - The two lead universities (UW and WiSU) take turns organizing and hosting
    - 2012 JAMS Meeting: hosted by UW, held in conjunction with AA&S Conference, 2-5 April, Baltimore
    - 2013 JAMS Meeting: hosted by WiSU, details TBD
  - Annual AMTAS meetings
    - One-day mtg, held during autumn (~ Oct-Nov) in the Pacific Northwest
    - Speakers drawn from 6 AMTAS universities
    - 84 registrants for today's meeting
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# JAMS/AMTAS Meetings

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- 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 sometime next week (Ellen will send e-mail when site is updated)
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# Short Course on Advanced Composites

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- 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/gov)
    - Cumbersome to schedule
    - Expensive for participants
  - 2.5-day (20-hr) short course developed - lecture materials extracted from 5-day course
    - 1-2 instructors
    - Nov 2011: NASA-Kennedy Space Center
    - March 2012: UW
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# Special thanks to..

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- The Boeing Company 
  - Our many additional industrial partners, particularly
    - Hexcel Corporation 
    - Cytec 
    - Toray 
    - General Plastics 
    - Intec 
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# Special thanks to..

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- 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*

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- 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.
  - 10:15-10:30 am - Coffee Break
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# The Meeting Today

## Mid-Morning Agenda

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- 10:30am-12:15 pm – Session II

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	Delamination/Disbond Arrest Features in Aircraft Composite Structures	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
11:25–11:40	Damage Tolerance Test Method Development for Sandwich Composites	Dan Adams, U of U
11:40–11:45	<i>Discussion</i>	
11:45–12:15	<i>Industry Feedback</i>	Gerry Mabson, The Boeing Co.
  - 12:15-1:00 pm - Lunch
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# The Meeting Today

## Afternoon Agenda

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- 1:00-3:10 pm – Session III

1:00-1:15	Certification of Discontinuous Composite Material Forms for Aircraft Structures	Brian Head/ Mark Tuttle, UW
1:15-1:20	<i>Discussion</i>	
1:20-1:35	Development of a Test/Analysis Cert. Protocol for Crashworthiness of Composite-Intensive Comm. Trans. Fuselage	Paolo Feraboli, UW
1:35-1:40	<i>Discussion</i>	
1:40-1:55	Composite Thermal Damage Measurement with Handheld FT-IR	Brian Flinn, UW
1:55-2:00	<i>Discussion</i>	
2:00-2:10	Update on Optimal Thermal Repair Project	Ashley Emery, UW
2:10-2:40	FAA Safety Awareness Course Developments	Larry Ilcewicz, FAA
2:40-3:10	<i>Industry Feedback</i>	Mostafa Rassaian, The Boeing Co.
- 3:10-3:30pm – Wrap up/Adjourn

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Mark Tuttle, UW

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

Thanks for attending!

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