

JOINT ADVANCED MATERIALS & STRUCTURES CENTER OF EXCELLENCE

Introduction to FAA Research

JAMS Third Annual Technical Meeting
July 10, 2006

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JAMS Program Manager



Topics

- FAA Research
- JAMS Center of Excellence
- Logistics
- Final Thought

Topics

- **FAA Research**
- JAMS Center of Excellence
- Logistics
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External Research Reviewers

REDAC
SAS
Aviation Industry

Airport & Aircraft Safety Research and Development

AASRD
develops
research
needs
from
AVS

Contracts,
Grants
and
Cooperative
Agreements

Research
product
returned
for
evaluation

Aviation Research Community

needs input
from research,
academia and
industry

AASRD
returns
research in
appropriate
context

AVS Requirements

✎AIR

✎CSTA

✎Directorates

✎ACOs

✎AFS

✎NRS

✎ASI

Direct Involvement
in Research
(Work Groups,
Workshops, etc.)

Direct Interaction
with users
(Training,
Workshops, etc.)

AVS Support

✎AIR

✎CSTA

✎Directorates

✎ACOs

✎AFS

✎NRS

✎ASI

Airport and Aircraft Safety Research and Development Program Areas

- Advanced Materials/Structural Safety
- Aging Aircraft Research
- Aircraft Catastrophic Failure Prevention
- Airport Research & Development
- Atmospheric Hazards
- Propulsion/Fuel Systems
- Fire Research & Safety
- Risk Analysis
- Flight Safety
- General Aviation /Vertical Flight (F&E)
- Unmanned Aerial Systems

Facilities

- Aircraft Components Fire Test Facility
- Air Flow Induction Test Facility
- Category I Reconfigurable Approach Lighting System Test Bed
- Chemistry and Material Sciences Laboratory
- Dynamic Vertical Drop Test Facility
- FAA Engine Nacelle Fire Simulator
- National Fire Extinguishing Agent
- Full-Scale Fire Test Facility
- Full-Scale Curved Panel Test System
- Materials Fire Test Facility
- National Pavement Test Facility
- Propulsion and Fuel Systems Test Facilities
- Runway Friction Laboratory
- Video Landing Loads Facility

Research & Training Supporting FAA Needs

1) Research Project

2) Detailed Documentation

and background for

3) Rules, Policy and Guidance

4) Training

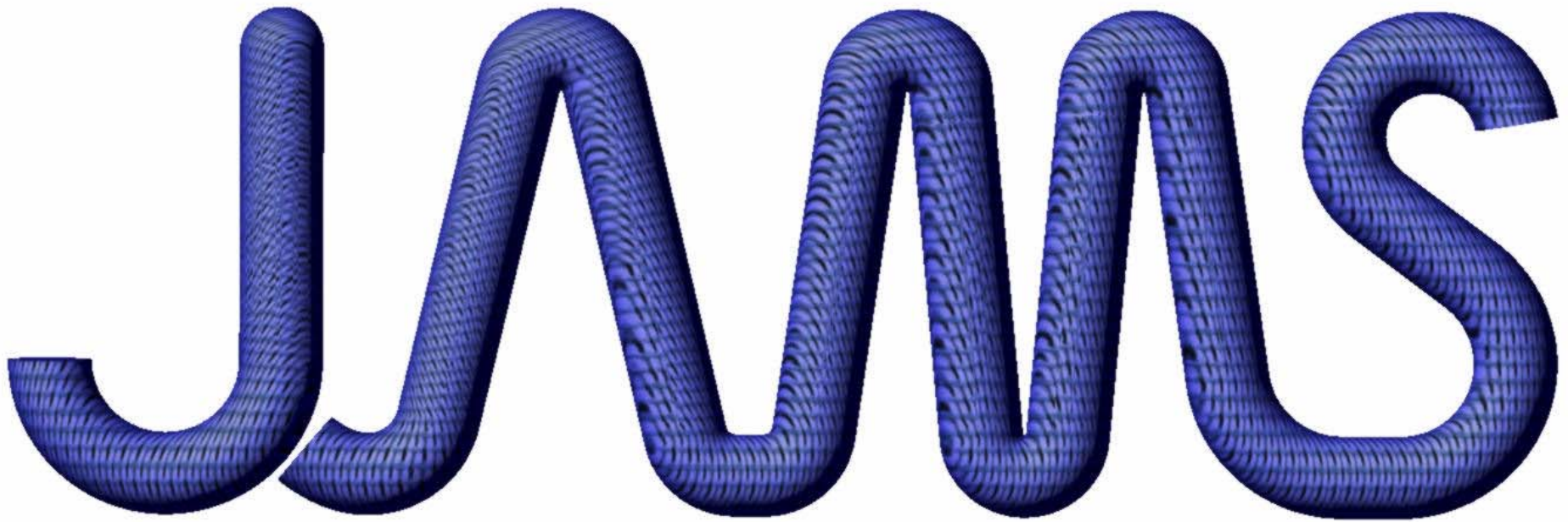
» In order for the research to have the greatest benefit, it should be adequately linked to:

- 1) FAA needs,
- 2) FAA groups establishing rules, policy or guidance
- 3) Certification projects,
- 4) Industry interface and, if appropriate,
- 5) New technology considerations

Areas Directly Supported

Topics

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JOINT ADVANCED MATERIALS & STRUCTURES CENTER OF EXCELLENCE

Member Schools

- The joint center consists of two groups and includes ten institutions
- AMTAS (Advanced Materials for Transport Aircraft Structures)



- CECAM (Center for Composite and Advanced Materials)



Common JAMS CoE Initiatives

Across all technical focus areas

- **Work with industry** to study issues and validate design details, analysis procedures, materials and processes for advanced aircraft structure.
- **Work with international standards organizations** (e.g., ASTM, SAE P-17, CACRC, TTCP and MIL-HDBK-17) to establish engineering guidelines.
- **Develop coursework and conduct workshops** to train the workforce.

- The initial technology areas addressed include:
 - Structural Substantiation
 - Damage Tolerance and Durability
 - Bonded Joints Processing Issues
 - Maintenance Practices
 - Material Standardization and Shared Databases
 - Advanced Material Forms and Processes
 - Cabin Safety and Crashworthiness
 - Life Management of Materials for Improved Aircraft Maintenance Practices
 - Nanotechnology for Structures



Transition to Phase II

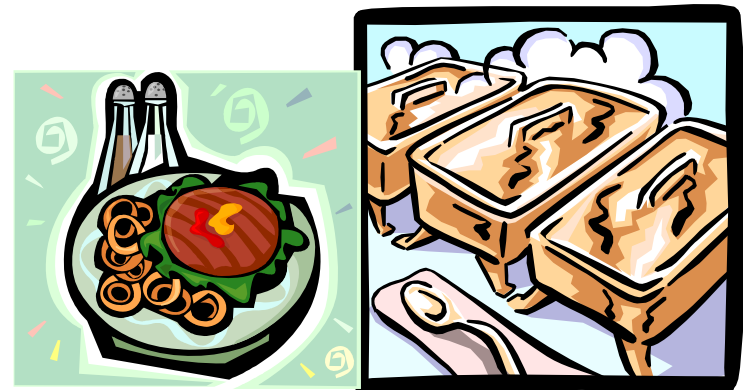
- First Phase is due to finish in July
- Evaluation will be done on effectiveness of the CoE
- Changes can be proposed for the structure and membership
- Due to multiple centers coming due at the same time, JAMS Phase I will be extended one year to allow proper evaluation and comment period

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- Restrooms are just outside of the doors towards the front of the building
 - Additional restroom towards the cafeteria but require escort
- Please restrict yourself to the Atrium area just outside the auditorium unless you have an FAA escort

- Refreshment will be available at breaks outside the auditorium
- No Food in the Hall
- Lunch provided in the cafeteria on Tuesday and Wednesday
- Lunch sponsors are:



Poolside Reception



- Tuesday, July 10
- Seaview Marriott
- 6:00PM to 8:00 PM
- Appetizers
- Cash Bar
- Casual Dress

Technical Presentation Rules

- Each project is given 30 minutes
 - 25 minute presentation period
 - 5 minutes for questions and comment period
- We will hold to these times to be fair to all projects
- Please feel free to provide the researchers and the FAA feedback on the projects directly at breaks and after the meeting



JAMS Presentations:
<http://www.jams-coe.org>



IN THE NEWS

The 2007 JAMS Technical Conference will be held July 10-12 at the FAA William J. Hughes Technical Center in Atlantic City, NJ. Stay tuned for more information!

The FAA Composite Damage Tolerance and Maintenance Workshop was held July 19-21 in Chicago, IL. The FAA Joint Advanced Materials and Structures Center of Excellence played a key role in this workshop.

Presentations are available for download via the link below.

[2006 FAA Composite Damage Tolerance and Maintenance Workshop](#)

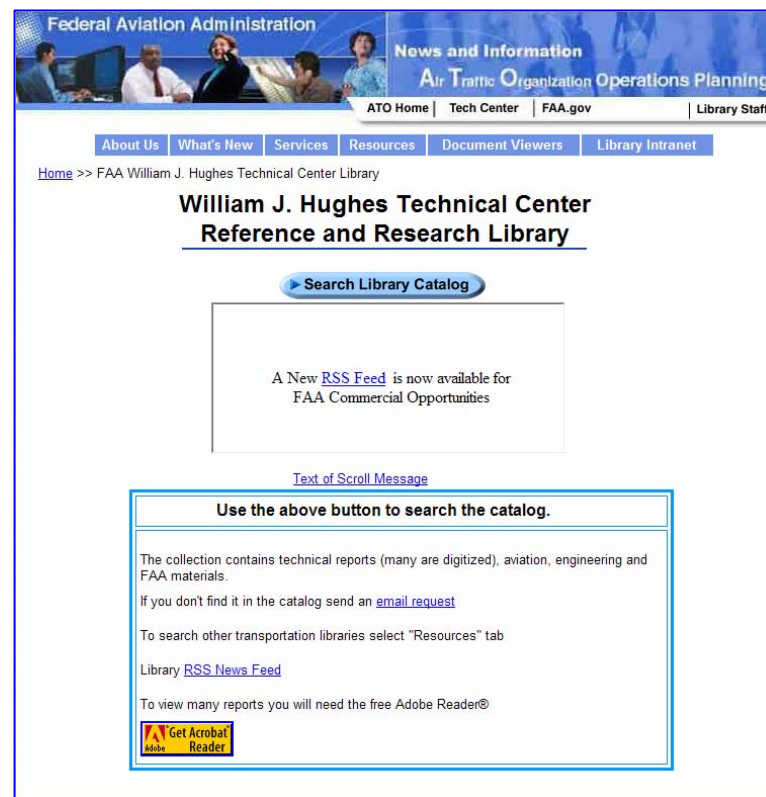
WHAT IS JAMS ALL ABOUT?

On December 18, 2003, the first day of the second century of flight, the Federal Aviation Administration announced the initiation of a Center of Excellence in Advanced Materials also to be known as JAMS (the FAA Joint Advanced Materials and Structures Center of Excellence). The center is a joint award to two separate consortiums: the Center of Excellence for Advanced Materials in Transport Aircraft Structures (AMTAS) led by the University of Washington and the Center of Excellence for Composites & Advanced Materials (CECAM) led by Wichita State University.

For more information on what JAMS is all about, [click here](#).

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FAA Technical Reports:
<http://actlibrary.tc.faa.gov>



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Final Thought

- The key to this meeting is its peer review forum
- Please do not hesitate to ask questions on things you do not understand
- Commentary is also welcomed
- We will limit each individual to one question at a time. When time allows, we will allow additional questions

