



# AMTAS Spring 2005 Meeting

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## Roundtable Discussion:

Strategies to Develop a Regional and Collaborative Center for Composite/Advanced Materials: Research, Education, and Training Needs

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# Regional Advanced Materials Center

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Concept: To expand the AMTAS scope to support other industries, including:

- a) Aviation
  - b) Marine
  - c) Transportation
  - d) Sporting goods
  - e) Medical devices
  - f) others...
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## Why?

- Different industrial segments often have common needs, for example:
    - Materials suppliers
    - Standard/reliable test methods
    - Accurate analysis methods
    - Maintenance and repair methodologies
- ...costs to develop and maintain these could be shared by multiple industrial segments/partners
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# Regional Advanced Materials Center

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## Why?

- A number of AMTAS partners are already involved in multiple industries (e.g., Hexcel, Toray, Intec...)
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# Regional Advanced Materials Center

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## Why?

- Significant increase in FAA funding unlikely for foreseeable future, but
  - Increase in number/breadth of research/training projects desirable
  - All FAA COEs are required to become self-sufficient after 10 years (or before!)  
...these factors imply AMTAS should expand its industrial base
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# Regional Advanced Materials Center

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## Why “Regional”?

- Federal and statewide political support to [maintain/establish/re-establish] the Pacific Northwest as home to innovative, state-of-the-art materials and manufacturing processes and manufacturing firms

(among other things, leads to high-quality jobs and high standard of living)

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# Regional Adv Mat'ls Center

## *Format of Roundtable Discussion*

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- Marine industry (10 mins)  
preliminary comments (Tuttle)  
focused discussion (all)
  - Transportation industry (10 mins)  
preliminary comments (Tuttle)  
focused discussion (all)
  - Sporting goods industry (10 mins)  
preliminary comments (Tuttle)  
focused discussion (all)
  - Medical Devices (10 mins)  
preliminary comments (Tuttle)  
focused discussion (all)
  - General "inclusive" discussion (20 mins)
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# Regional Adv Mat'ls Center *Marine Industry*

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Autumn 2004: Sen. Cantwell's office suggested AMTAS explore use of composites in marine applications...led to a series of meetings (all since December 2004):

- Paul Isaki (formerly of Gov Locke's Office)
  - Ron Barry, et al (BAE Systems, Redmond)
  - Bryan Nichols (Nichols Bros Boat Bldrs, Freeland)
  - Commander Michael Anderson (US Coast Guard, Arlington, VA)
  - Ron Selvidge (Art Anderson Associates, Bremerton)
  - Rebecca Taylor, et al (National Center for Manufacturing Sciences, Bremerton)
  - Laurens Zuidweg, et al (WA State Ferries, Seattle)
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# Regional Adv Mat'ls Center *Marine Industry*

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## Impressions:

- Marine industry is fragmented, with no “dominant” player (analogous to Boeing) to rally behind
  - Production volumes can be much lower (e.g., ferries) or much higher (e.g., recreational boats) than aviation industry
  - Don’t overlook on-shore marine structures (e.g., ferry ramps)
  - Greatest needs:
    - Low-cost, “tailorable” molds/tooling
    - Education/training in advanced composite materials and manufacturing processes
    - Materials standards, especially w/r/t flammability
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# Regional Adv Mat'ls Center *Transportation Industry*

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- As of Dec 2003: "Worldwide...at least 175 vehicular bridges and 160 pedestrian bridges (are) in service"  
<http://www.compositesworld.com/ct/issues/2003/December/325>
  - Composites widely used for seismic retrofits and repair of deteriorating highways/bridges
  - Preliminary discussion of a number of interesting projects (e.g., cantilevered bicycle lane on 520 or I90 bridges; new 520 suspension bridge)
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# Regional Adv Mat'ls Center

## *Sporting goods*

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- Often high-volumes (skis, skateboards, tennis rackets, golf clubs)
  - Can be relatively price insensitive
  - Often “proving ground” for new technologies (e.g., nano-reinforced graphite/epoxy golf clubs now commercially available – Wilson Staff Pd5 and Dd5 Drivers)
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# Regional Adv Mat'ls Center *Medical Devices*

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- Composites/advanced materials widely used in prosthetics of all types
- (At UW) possible conflicts/collaboration with existing UW Center for Nanotechnology:

<http://www.nano.washington.edu/index.asp>

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# Regional Adv Mat'ls Center *General Discussion*

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- Next Steps?
  - Action Items?
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