

# Air Transportation Centers of Excellence

## Government-Academic-Industry Strategic Partnerships

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FAA Centers of Excellence

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Meeting: COE Advanced Materials



Federal Aviation  
Administration



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# Legislative Authority

Omnibus Budget  
Reconciliation Act of 1990  
Public Law 101-508  
Title IX – Aviation Safety  
and Capacity Expansion Act

*“The Administrator may make grants to one or more colleges or universities to establish and operate several regional centers of air transportation excellence, whose locations shall be geographically equitable. The responsibilities of each regional center shall include, but not be limited to, the conduct of research concerning airspace and airport planning and design, the air transportation environment, aviation safety and security, the supply of trained air transportation personnel including pilots and mechanics, and other aviation issues pertinent to developing and maintaining a safe and efficient air transportation system....each center may make contracts with nonprofit research organizations and other appropriate persons....”*

# Selection Criteria

## Public Law 101-508

- ***The extent to which the needs of the State in which the applicant is located are representative of the needs of the region for improved air transportation services and facilities.***
- ***The demonstrated research and extension resources available to the applicant to carry out this section.***
- ***The ability of the applicant to provide leadership in making national and regional contributions to the solution of both long-range and immediate air transportation problems.***
- ***The extent to which the applicant has an established air transportation program.***
- ***The demonstrated ability of the applicant to disseminate results of air transportation research and educational programs through a statewide or regionwide continuing education program.***
- ***The projects the applicant proposes to carry out under the grant.***



# FAA Established COE Partnerships & Topics

\* General Aviation – June 2012

**Commercial Space Transportation (CST) - 2010**

**Research in the Intermodal Transport Environment (ACER/RITE) - 2004**

**Advanced Materials (JAMS) - 2004**

**Aircraft Noise & Aviation Emissions Mitigation (PARTNER) - 2003**

**General Aviation (CGAR) – 2001 to 2013**

**Airport Technology (CEAT) – 1995 to 2013**

\* **Airworthiness Assurance (AAACE) – 1997 to 2007**

**Operations Research (NEXTOR) – 1996 to Present**

\* **Joint Center for Computational Modeling of Aircraft Structures – 1992 to 1996**



# FAA COE GEOGRAPHIC DISTRIBUTION

## AIRLINER CABIN ENVIRONMENT – INTERMODAL RESEARCH

Auburn Un.- Admin Lead  
 Harvard Un.  
 Purdue Un.  
 Boise State Un.  
 Kansas State Un.  
 Un. of Med & Dentistry of NJ

## NOISE AND EMISSIONS MITIGATION

MIT – Lead  
 Boston Un.  
 Georgia Tech  
 Harvard Un.  
 Penn State Un.  
 Purdue Un.  
 Stanford  
 Un. of Illinois  
 Un. of Missouri-Rolla  
 Un. of Pennsylvania  
 Un. of North Carolina-  
 Chapel Hill

## GENERAL AVIATION

Embry Riddle Aeronautical Un. -Lead  
 Un. of Alaska  
 Un. of North Dakota  
 Wichita State

## AIRPORT TECHNOLOGY

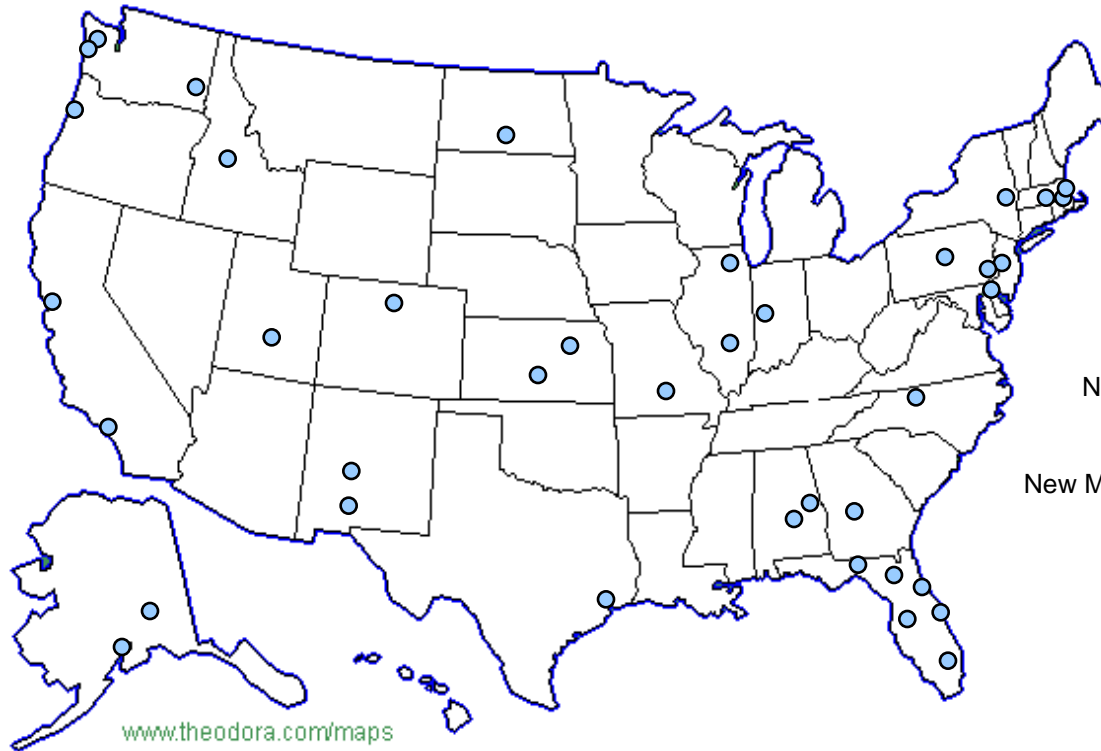
Un. of Illinois  
 RPI

## ADVANCED MATERIALS

Un. of Washington – Co-Lead  
 Wichita State Un.- Co-Lead  
 Edmonds Community College  
 Florida Internal Un.  
 Northwestern Un.  
 Purdue Un.  
 Oregon State Un.  
 Tuskegee Un.  
 Un. of California at LA  
 Un. of Delaware  
 Un. of Utah  
 Washington State Un.

## COMMERCIAL SPACE TRANSPORTATION

New Mexico State Un.- Admin Lead  
 Stanford Un.  
 Florida Institute of Technology  
 New Mexico Inst of Mining & Technology  
 Florida State Un.  
 Un. of Florida  
 Un. of Central Florida  
 Un. of Colorado at Boulder  
 Un. of Texas Medical Branch



[www.theodora.com/maps](http://www.theodora.com/maps)

## OPERATIONS RESEARCH

UC-B, MIT, UMD, VPI, Geo Mason

## AIRWORTHINESS ASSURANCE

31 Equal University Partners

## GENERAL AVIATION 2012

TBD



# COE Coordination & Oversight

1) FAA COE Program Director / Grants Officer  
FAA Sponsoring Organization

FAA & University Offices  
Legal – Contracts – Financial Reps.  
Public Affairs – Gov't Affairs  
& Grants Officers

COE University Directors / Leads  
University PIs

2) FAA COE Program Manager(s)  
3) FAA Technical Monitor(s)

Add'l Internal Advisors: Dept of Transportation  
Office of Acquisition & Grants Management

# Responsibilities - FAA

- **The FAA COE Program Officer**
  - Conducts competitive selection process
  - Establishes COEs and provides overall non-technical oversight
  - Reassesses COE management, projects, and progress
  - Represents the COE Program for the FAA
  - Serves as Grants Officer
    - Negotiates *cooperative agreements*
    - Awards funding, audits matching contributions
- **The FAA sponsoring organization**
  - Commits funding - 10 years
    - Grants
    - Contracts
  - Assigns COE Program Manager - overall direction
  - Assigns Task Monitors
    - Oversee technical progress
    - Evaluate new projects





# Responsibilities – Members & Affiliates

- **The University Members –**
  - Form teams of COE subject matter experts
    - Submit proposals, conduct research, tech transfer, outreach, and related activities
    - Assign faculty / students to projects
    - Obtain matching contributions
    - Provide leadership in the field, serve on committees, report to Congress
    - Meet quarterly during first year, semi-annually thereafter
    - Host meetings to enhance partnership opportunities
- **Private and Other Public Entities**
  - Serve on COE Advisory Boards, committees
  - Sponsor and/or conduct joint research efforts
  - Provide matching contributions in accordance with gov't guidance:
    - Labor
    - Materials
    - Lab space
    - Host meetings
    - Cash, etc.



# Evaluation Processes

## COE projects and progress are reassessed every three years

- Audit of matching funds and expenditures
- Letters to members, etc. regarding COE performance
- FAA reviews input, determines future direction
- Discussions regarding changes
- Close-out previous phase
- Negotiate new Cooperative Agreements
- Review status of self-sufficiency plans and define future direction

## + Ten-year evaluation

- Showcase research results
- Audit matching contributions
- Review progress, status of self-sufficiency plans
- Transition period, identify students/projects
- Determine future direction

# 10-Year COE Evaluation

- **FAA COE Program Director and Center Program Manager review:**
  - Initial justification to establish the COE
  - Final Solicitation
  - Winning Proposal
- **COE schedules 10-yr symposium/showcase to highlight research results – set date**
- **COE PD seeks input regarding performance**
  - Send letters to members
  - Send letters to affiliates
- **COE PD prepares report. Advise senior management:**
  - Results/Issues/Benefits of COE
    - Determine costs to manage Center and matching provided
    - Audit matching funds
  - Organizational changes impacting future direction
- **Sponsor identifies FAA future technical needs**
- **COE PD announces results of evaluation, advises AOA-1**
  
- **If need continues for COE in the topic area, prepare request for AOA concurrence. Sponsor**
  - justifies need and anticipated funding
  - defines new tech requirements, role of Center, other changes

COE PD requests concurrence of senior management and AOA-1

# COE Evaluation (continued)

- **COE briefs FAA senior management**
- **The Evaluation Team considers the extent to which:**
  - The criteria that led to the initial selection have changed over the life of the COE
  - The COE has been responsive to FAA research and other needs
  - The current team is able to support future research requirements
  - The COE has demonstrated technical quality and usability of research products via technology transfer
  - The Center has been inclusive of underrepresented groups and conducted outreach efforts
  - The current team members have demonstrated an ability to adequately generate matching contributions and outside research support



# History

- Total FAA Contribution:
- Projects Completed and On-going:
- Total Matching Contributions:  
Breakdown of Sources / Contributions



# Sample Project Report

## Objectives

## Tech Monitor:

PI:

Status:

FY-0X Funds Awarded:

## Research Products

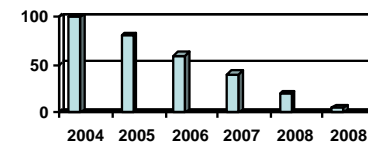
Final Report (Date)

# Technical Papers published

Conclusions applicable to FAA

XXX Procedures

FAA Funding by FY



# Academic Outcomes

- Number of Ph.D. Dissertations:
- Number of M.S. level Theses:
- Number of COE Technical Reports and Publications:
  - List -
- Presentations, etc:
  - [Insert Here](#)

# Financial Status Summary

- Funding provided through FAA Grants: \$\_\_\_\_\_
- FAA COE grants matched:
  - Student salaries:
  - In-kind and cash contributions:
    - Amounts
    - Sources

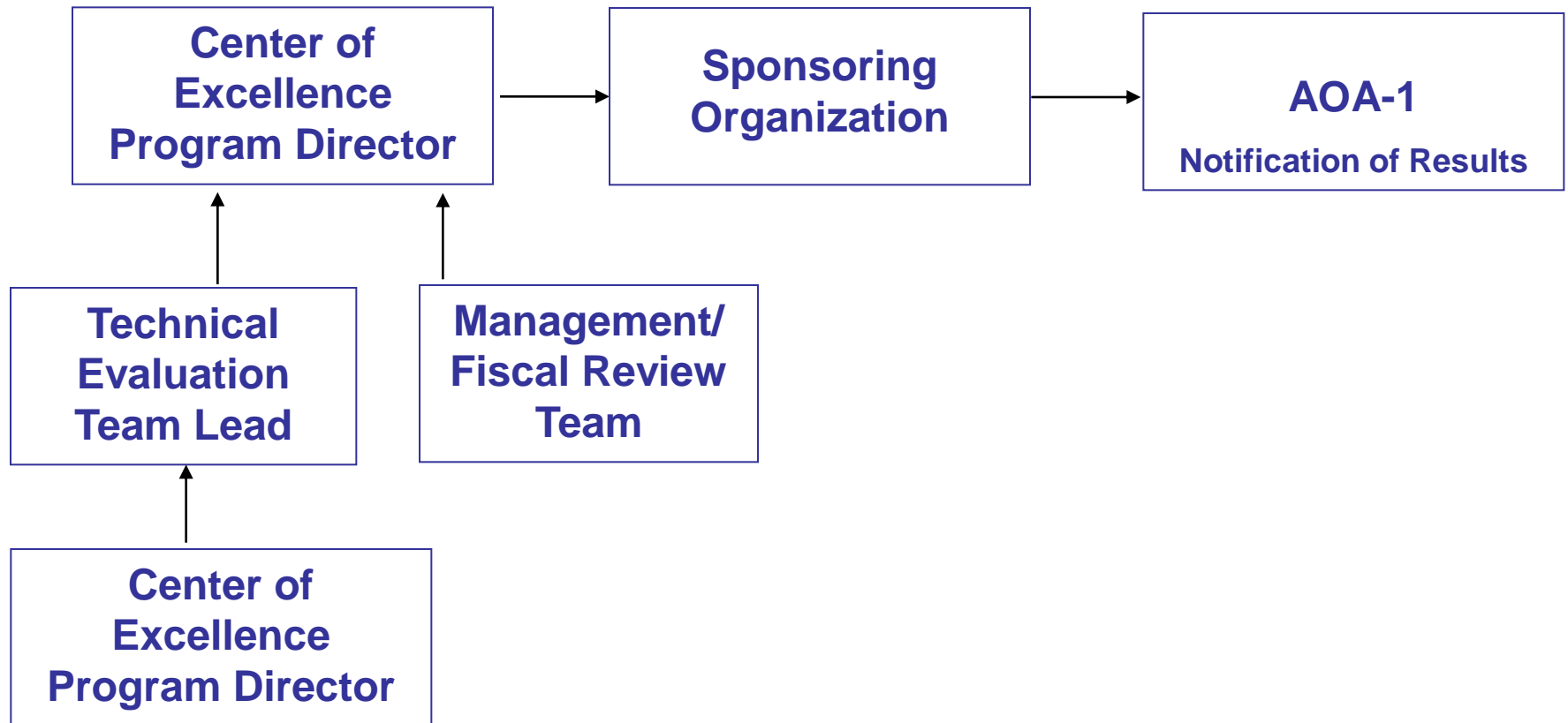
COE administrated by Program Offices located at the University of Washington and Wichita State University

- Total administrative costs at each: \$75K per year \$\_\_\_\_\_





# Ten-Year Evaluation



# FAA CENTERS OF EXCELLENCE



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