

FAA Centers of Excellence Program Overview

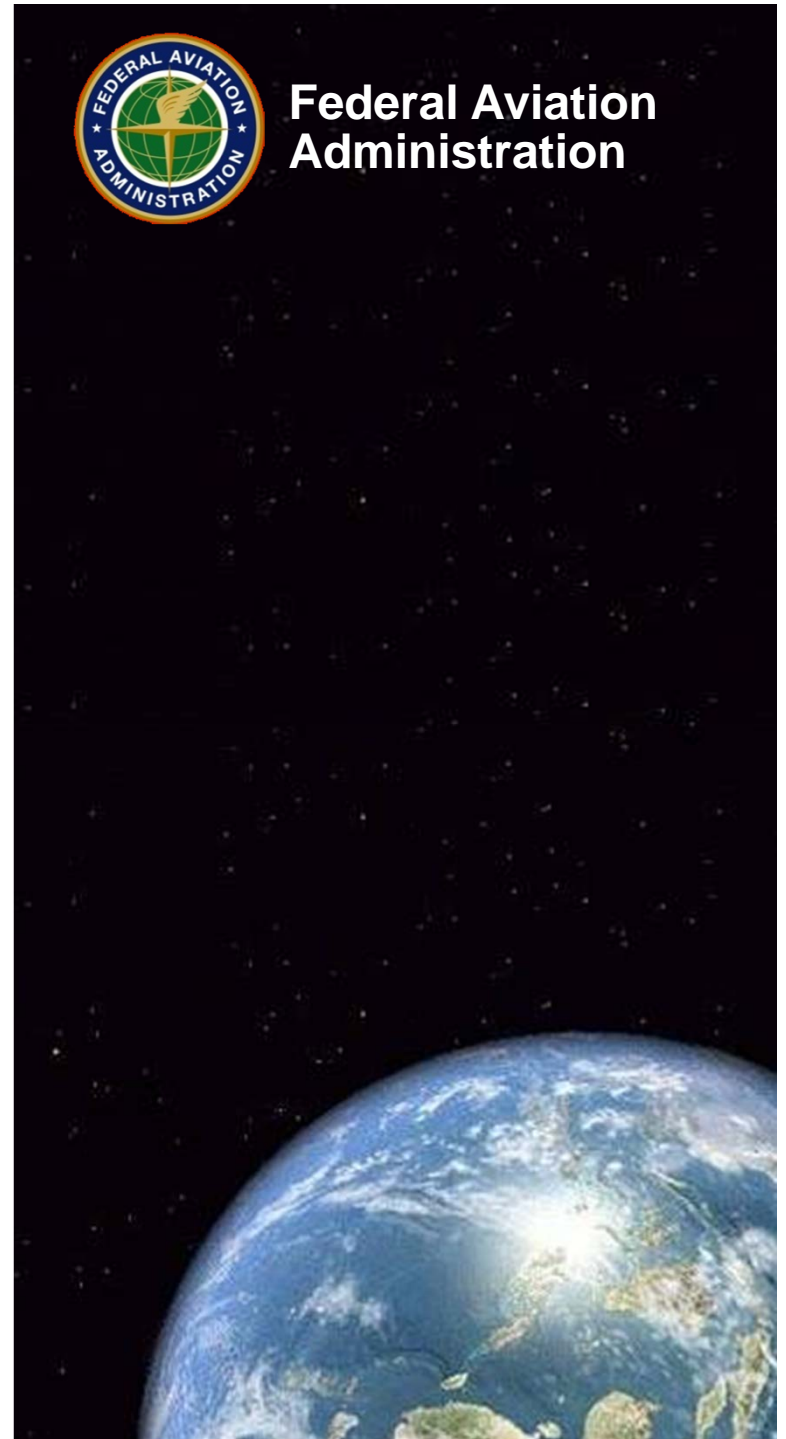
COE CST First Annual Technical Meeting

**Presented by: Patricia Watts
Program Director, FAA COEs**

***Date: November 9, 2011
University of Colorado - Boulder***



**Federal Aviation
Administration**



COE PROGRAM OVERVIEW

**Legislative Authority
Requirements & Outcomes
Geographic Distribution
University Members
Unique Funding Combination
Role of Industry & Affiliates
Annual Meetings
Benefits**

Attachment – Established Centers
Contact Information



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....”



FAA COEs - Established

COE for General Aviation 2012 - TBD

COE for Commercial Space Transportation (CST) - 2010

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

Joint COE for Advanced Materials (JAMS) - 2004

FAA/NASA/Transport Canada COE for Aircraft Noise & Aviation Emissions Mitigation (PARTNER) - 2003

COE for General Aviation (CGAR) – 2001

COE for Airport Technology (CEAT) – 1995

COE for Airworthiness Assurance (AACE) – 1997 to 2007

COE for Operations Research (NEXTOR) – 1996 to 2007

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
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

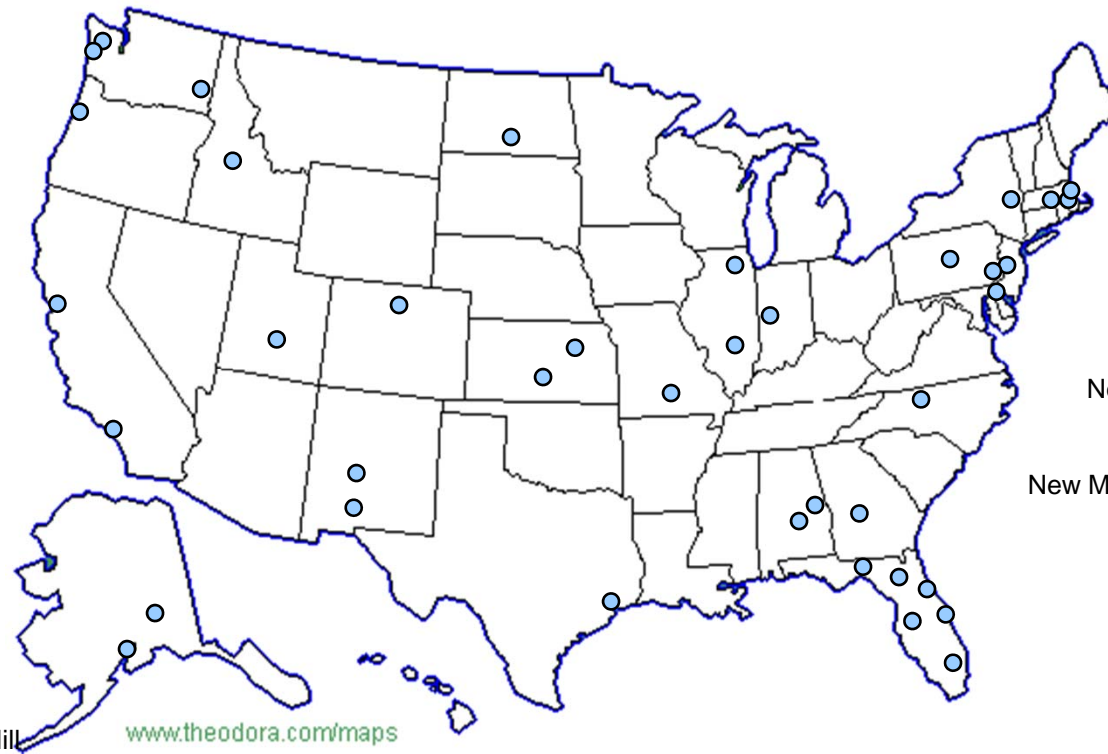
Un. of Illinois
RPI

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



OPERATIONS RESEARCH

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

AIRWORTHINESS ASSURANCE

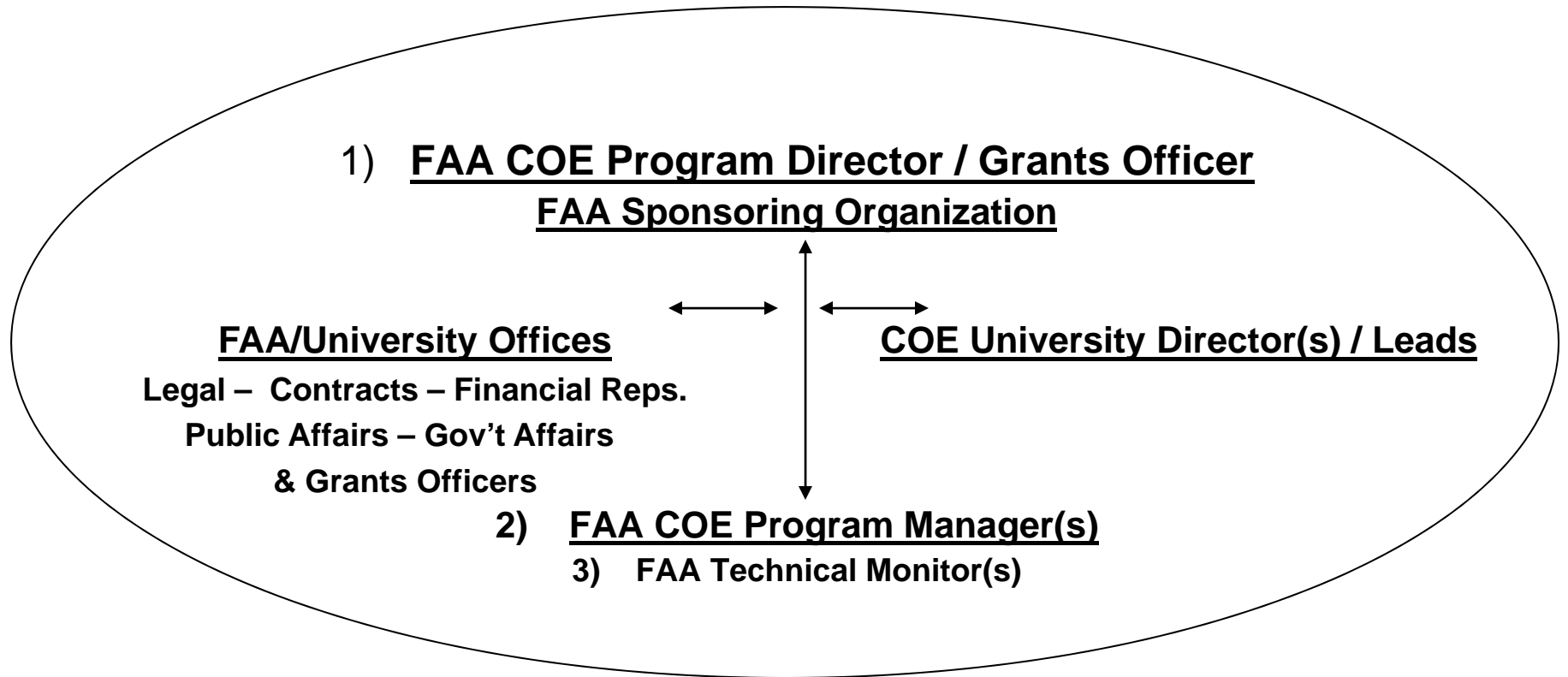
31 Equal University Partners

GENERAL AVIATION 2011

TBD



FAA COE Levels of Oversight



Internal Advisors

DOT Office of Acquisition & Grants Management, M-60

COE UNIVERSITY MEMBERS

Auburn University
Boise State University
Boston University
Edmonds Community College
Embry-Riddle Aeronautical University
Florida Institute of Technology
Florida International University
Florida State University
Georgia Institute of Technology
Harvard University



Andrew Leonard – UND
2010 DOT FAA COE Student of the Year



John Porcari – Deputy Secretary of Transportation
Chelsea He – 2011 DOT FAA COE Student of the Year

Kansas State University
Massachusetts Institute of Technology
New Mexico Inst of Mining & Tech
New Mexico State University
Northwestern University
Oregon State University
Pennsylvania State University
Purdue University
Rensselaer Polytechnic Institute
Stanford University

COE UNIVERSITY MEMBERS

Tuskegee University
University of Alaska at Anchorage
University of Alaska at Fairbanks
University of California at Los Angeles
University of Central Florida
University of Colorado at Boulder
University of Delaware
University of Florida
University of Illinois at Urbana Champaign



Phillip Donovan – UIUC
2008 DOT FAA COE Student of the Year



Peter Sparacino – FAA CGAR Program Manager,
Daniel J. Halperin – 2008 ERAU COE Outstanding Student of the Year
Patricia Watts – FAA COE Program Director
Steven Hampton – ERAU CGAR Principal Investigator

Un of Medicine & Dentistry of NJ
University of Missouri at Rolla
University of North Dakota
University of North Carolina at Chapel Hill
University of Pennsylvania
University of Texas Medical Branch
University of Utah
University of Washington
Washington State University
Wichita State University

UNIQUE FUNDING COMBINATIONS

- COE Research Grants / Public Purpose - require matching funds to establish, operate and conduct research. Mandated by Congress.
- Cost-share contracts / FAA Purpose - awarded following competitive process. Authorized by the White House Reinvention Lab
- Centers receive funding from any public or private source.
- Each core member receives direct awards from FAA.
- As set forth in P.L. 101-508:
Centers may contract with others as appropriate



COE FUNDING LEVELS

| YEAR | CENTER OF EXCELLENCE | AMOUNT |
|------------------------|--|-----------------|
| 1992 to 1996 | Computational Modeling of Aircraft Structures – Airport & Aircraft Safety R&D Division, TC | \$ 10 M |
| 1995 - present | Airport Technology – Airport & Aircraft Safety R&D Division, TC (Formerly: Airport Pavement Research) | \$ 40 M |
| 1996 – 2007 | Operations Research* - Systems Architecture, Hdq. | \$ 47 M |
| 1997 – 2007 | Airworthiness Assurance* - Airport & Aircraft Safety R&D Division, TC | \$ 135 M |
| 2001 - present | General Aviation* - Airport & Aircraft Safety R&D Division, TC | \$ 36 M |
| 2003 - present | Aircraft Noise and Emissions Mitigation* - Office of Environment & Energy, Hdq. | \$ 75 M |
| 2004 – present | Advanced Materials - Airport & Aircraft Safety R&D Division, TC | \$ 40 M |
| 2004 – present | Research in the Intermodal Transport Environment – Office of Aeromedical Research, Hdq. (Formerly: Airliner Cabin Environment) | \$ 38 M |
| 2010 - present | Commercial Space Transportation* - Office of Commercial Space Transportation, Hdq. | \$ 5 M |
| Level of Effort | May Include: Grants, Matching Contributions, Contracts and Interagency Agreements | \$ 426 M |



RESULTS

| | |
|--|--------------------|
| COE Partnerships Established | 9 |
| University Partners and Affiliates | > 260 |
| Official Collaborations with: NASA, Transport Canada, Sandia, Iceland, DoD, Volpe, etc. | > 12 |
| Projects Supported | > 600 |
| Graduate Students Supported | > 1,500 |
| Published Articles, Reports, Doctoral Theses | > 2,500 |
| Matching Funds | > \$226M |



ROLE OF GOV'T & INDUSTRY

- **Federal Government - Commits seed funds for research, education, and tech transfer over a period of 10 ys.**
- **Private Sources -**
 - Serve on COE Advisory Boards
 - Provide matching contributions such as cash or in-kind contributions in accordance with OMB guidance such as:
 - **Labor**
 - **Materials**
 - **Lab space**
 - **Host meetings**
 - **Etc.**



COE AFFILIATES / CO-SPONSORS

Advanced Transportation R&E Laboratory (ATREL)

Aero Shell
AeroClave

Aerodyne Research Inc.

Air Force Research Laboratory

Air Tran Airways

Air Transport Association of America (ATA)

Airborne Express

Airbus Industries

Aircraft Owners & Pilots Association (AOPA)

Airline Pilotss Association (APA)

Airports Council International – North America

Alaska Airmen's Association

Alaska Airways

Alaska Science and Technology

Alcoa Technical Center

AlliedSignal

Allison Engine Company

Aloha Airlines

American Airlines

American Eagle Airlines, Inc.
American Institute of Aeronautics and Astronautics (AIAA)

ARINC Dayton

Battelle

Bell Helicopter TEXTRON

BF Goodrich R&D Center

Boeing Company

Bombardier Aerospace-Learjet

Brookhaven National Lab

California DOT

Cape Air

Cessna Aircraft

Chicago O'Hare International Airport

Cirrus Aviation

Comair, Inc.

Continental Airlines

Delta Airlines

Donaldson Company, Inc.

Draper Laboratory

Elite Air Center

Executive Jet Aviation

Experimental Aircraft Assoc (EAA)

FedEx Corporation

General Aviation Mfg Assn (GAMA)

Goodrich

Gulfstream Aerospace Corporation

Harris Corporation

Honeywell

Illinois Department of Aeronautics

Indiana Department of Transportation

International Centre for Indoor Environment & Energy, Technical University of Denmark

JENTEK Sensors, Inc.

Livermore Software Technology Corp.

Lockheed Martin Aeronautics Company

Los Angeles World Airports

Lufthansa

Maryland Aviation Administration

Massachusetts Port Authority

McDonnell Douglas Aerospace

Metron Aviation, Inc.

Metropolitan Washington Airport Authority

NASA

National business Aviation Assn (NBAA)

NMS Bio-Defense

Northrop Grumman Corporation

Northwest Airlines

Northwest Composites

O'Hare Modernization Program (OMP)

O'Hare Noise Compatibility Commission

Ohio Department of Development

Ohio Department of Transportation

Pratt & Whitney

Professional Flight Attendants Association

Raytheon Aircraft Company

Regional Airport Authority of Louisville and Jefferson County

Rockwell International

Rolls Royce

SAE International

San Francisco Inter. Airport/Community Roundtable

Sandia National Laboratories

Seagull Technology

Sikorsky Aircraft

Southern Air Transport

Southern California Association of Governments

Southwest Research Institute

Spitfire Aviation Partners

SRI International

Illinois Dept. of Transportation

STERIS Corporation

Sun Microsystems

Transport Canada

United Airlines

United Parcel Service

US Airways

US DOT Volpe National Transp Systems Center

US EPA

Virginia Department of Transportation

Wyle Laboratories



STREAMLINED ADMINISTRATION

- The FAA sponsoring organization assigns a COE Program Manager to each Center. The funding source assigns a Task Monitor to each task.
- The Gov't funds COE projects on an on-going basis following proposal submission and technical evaluations conducted by the sponsoring or funding organization.
- Projects may be funded for public purpose - using grants, or for FAA purpose to obtain deliverables - using contracts.
- Members meet quarterly during first year, semi-annually thereafter. Universities or industry affiliates host meetings to enhance partnership opportunities.
- The COE management, projects, and progress are reassessed every three years; matching funds are audited.



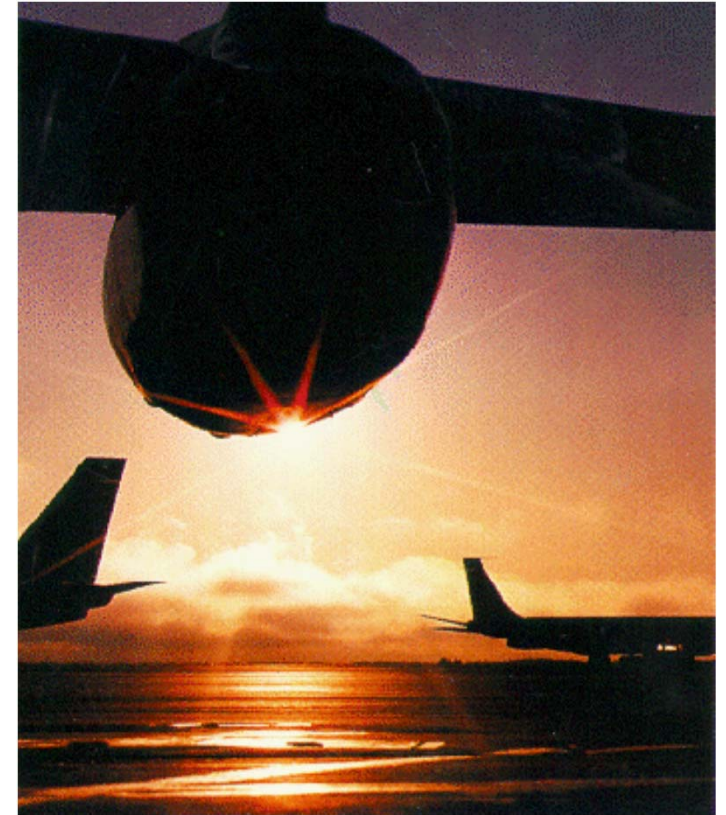
COE Annual Meetings

- **Students are provided an opportunity to highlight their work and engage in technical discussions with leaders in the field, and seek career opportunities.**
- **Senior scientists have a forum for disseminating research results, coordinating efforts, and fielding new research ideas amongst peers.**
- **Government, industry and university members have a venue to engage in discourse to enhance and expand partnership opportunities, generate matching funds, and review research direction and progress – across organizational lines on *neutral territory*.**



COE BENEFITS

- **Promote** academic, government & industry scientific networks prepared to enhance the safety, security & efficiency of the national airspace system
- **Augment** government resources and leverage funds through flexible and responsive public/private partnerships
- **Expand** the U.S. math & science pipeline and facilitates aerospace recruitment opportunities
- **Provide** a formal strategy & trusted structure to coordinate a national research agenda and related education, and training
- **Advance** U.S. technology and expertise while satisfying Congressional mandate



The nation must immediately reverse the decline in and promote the growth of a scientifically and technologically trained U.S. aerospace workforce"

Final Report of the Commission on the Future of the United States Aerospace Industry

FAA CENTERS OF EXCELLENCE



Patricia Watts, Ph.D.
National Program Director
Air Transportation Centers of Excellence



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Atlantic City International Airport, NJ 08405
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Fax: (609) 485-9430
Email: patricia.watts@faa.gov
Website: www.coe.faa.gov



COE for Commercial Space Transportation

- **Competitively Selected by FAA Administrator – August, 2010**
- **Technology Areas:**
 - **Space Traffic Management & Operations**
 - **Launch Vehicle Systems**
 - **Human Space Flight**
 - **Space Commerce**

Sponsor: FAA Headquarters - Office of Commercial Space Transportation

Members: New Mexico State University, Stanford University, New Mexico Institute of Mining and Technology, Florida Institute of Technology, Florida State University, University of Central Florida, University of Florida, University of Colorado at Boulder, University of Texas Medical Branch

Administrative Lead: New Mexico State University
Patricia Hynes: pahynes@nmsu.edu



COE for Research in the Intermodal Transport Environment (RITE)

- **Competitively Selected by the FAA Administrator – August 2004**
- **Technology Areas:**
 - **Development of Sensors and Sensor Systems to Monitor Cabin Air Environment and Detect Potential Environment Contaminants**
 - **Investigation of the Health Effects of Potential Contaminants and Other Aspects of Contained Environments**
 - **Field and Laboratory Analysis of Potential Contaminants**
 - **Development of Databases, with Supporting Architecture, for Documentation of Contaminants and Contaminant Incidents**

Sponsor: FAA Headquarters - Office of Aerospace Medicine

Core Members: Harvard University, Purdue University, Auburn University, Boise State University, Kansas State University, University of Medicine and Dentistry of New Jersey;

Affiliate Members: Oklahoma State University, St. Louis University, University of Alabama at Huntsville

Administrative Lead: Auburn University
Tony Overfelt: overfra@auburn.edu



COE for Intermodal Transport Environment Research Affiliates

AeroClave LLC
AirOcare
Air Transport Association
Altera Inc.
Ansys
Battelle
The Boeing Company
Delta Air Lines
Donaldson Company Inc.
Goodrich Sensor Systems
Honeywell

Intergraph
InvisiMED
Keddeg Company
Microchip Technology Inc.
The MITRE Corporation
Pall Aeropower Corp.
Singapore Airlines
Southwest Airlines
STERIS Corporation
TSI Inc.
US Airways



Joint COE for Advanced Materials (JAMS)

- **Competitively Selected by the FAA Administrator – December 2003**
- **Technology Areas:**
 - **Safety and Certification Initiatives of Composites and Advanced Materials on Large Transport Commercial Aircraft**
 - **Safe and Reliable Use of Advanced Materials in Aircraft Workforce Training**
 - **Relationships Between Design, Manufacturing, Operations, and Maintenance**

Sponsor: Aircraft Research Division

Members: University of Washington, Wichita State University, Edmonds Community College, Florida International University, Northwestern University, Purdue University, Oregon State University, Tuskegee University, UCLA, University of Delaware, University of Utah, Washington State University

University Co-Leads: Wichita State U. and the U. of Washington

John Tomblin, Ph.D., john.tomblin@wichita.edu

Mark Tuttle, Ph.D., tuttle@u.washington.edu



Joint COE for Advanced Materials Affiliates

Composites and Advanced Materials Team

Industry Affiliates

WICHITA STATE UNIVERSITY

Adam Aircraft
ASTM International
Boeing
Bombardier
Cessna, a Textron Company
CIRRUS Design
Hawker Beechcraft
Piper Aircraft
Spirit AeroSystems

Advanced Materials in Transport Aircraft

Structures Team

Industry Affiliates

UNIVERSITY OF WASHINGTON

A&P Technology
Bell Helicopter
The Boeing Company
C&D Zodiac
Composite Solutions, Inc.
Cytec Engineered Materials
General Plastics Manufacturing Co.
Heatcon Composite Systems
Hexcel
Integrated Technologies, Inc.
Toray Composites (America), Inc.
Triumph Composite Systems, Inc.



FAA/NASA COE for Aircraft Noise & Aviation Emissions Mitigation (PARTNER)

- **Competitively Selected by the FAA Administrator – August 2003**
- **Single Source Contract Authority: \$6M cap**
- **Technology Areas:**
 - **Socio-economic Effects of Noise and Emissions Impacts**
 - **Noise Abatement Flight Procedures**
 - **Compatible Land Use Management**
 - **Airport Operational Controls**
 - **Noise and Emissions Measurements and Health**

Sponsors: FAA Hdq - Office of Environment & Energy in partnership with NASA and Transport Canada

Members: MIT, Harvard University, Pennsylvania State University, Purdue University, Stanford University, University of Missouri-Rolla, Georgia Institute of Technology, University of North Carolina – Chapel Hill, York University of Canada, University of Illinois Urbana Champaign, Boston University, University of Pennsylvania

University Lead: Massachusetts Institute of Technology

Ian Waitz, iaw@mit.edu



COE for Aircraft Noise & Aviation Emissions Mitigation Affiliates

Aerodyne Research, Inc.
Aerospace Industries Association
Airbus
Air Line Pilots Association
Air Transport Association of America
Airports Council International - North America
American Institute of Aeronautics and Astronautics
Bay Area Air Quality Management District
Bell Helicopter Textron, Inc.
Boeing Commercial Airplanes Group
Delta Air Lines, Inc.
General Electric Aircraft Engines
Gulfstream Aerospace Corporation
Indiana Department of Transportation
Lockheed Martin Aeronautics Company
Logistics Management Institute
Massachusetts Port Authority
Metron Aviation, Inc.

Metropolitan Washington Airports Authority
National Organization to Insure a Sound-controlled Environment (N.O.I.S.E.)
O'Hare Noise Compatibility Commission
Palisades Citizens Association
Pratt & Whitney
Raisbeck Engineering
Regional Airport Authority of Louisville and Jefferson County
Rolls-Royce, plc
San Francisco International Airport/Community Roundtable
Sikorsky Aircraft Corporation
United Parcel Service Airline
United Technologies Pratt & Whitney
Wyle Laboratories



COE for General Aviation (CGAR)

- **Competitive Selection by FAA Administrator: 2001**
- **Single source contract authority: \$20M cap**
- **GA Technology Areas:**
 - **Aging Aircraft**
 - **Crashworthiness**
 - **Propulsion**
 - **Icing**
 - **Advanced Materials**

Sponsor: Aircraft Research Division

Members: Embry-Riddle Aeronautical University, University of Alaska at Fairbanks and Anchorage University of North Dakota, Wichita State University

University Lead: Embry-Riddle Aeronautical University

Steven Hampton, hamptons@db.erau.edu



COE for General Aviation Affiliates

Industry Affiliates

Aero Shell

Aircraft Welding Works

Alaska Airmen's Association

Alaska Aviation Safety Foundation

Aviation Management Associates

Avidyne Corporation

Bombardier Aerospace

Cessna Aircraft Corporation

Cirrus Aviation

Eclipse Aviation

Elite Air Shares

Frasca International

Goodrich Corporation

HandySoft Corporation

Hartzell Propeller, Inc.

Jeppesen

Lancair

Lockheed Martin

Raytheon Aircraft
Company

Sun Microsystems

SMA

The Alaska Science &
Technology

The Boeing Company

Vector Training Systems

Advisory Group Members

Aircraft Owners and Pilots Association
(AOPA)

Experimental Aircraft Association
(EAA)

General Aviation Manufacturers
Association (GAMA)

National Business Aviation
Association (NBAA)

State Aviation Directors – Florida,
Arizona, Alaska, Kansas, and North
Dakota



COE for Airworthiness Assurance (AAE)

- **Competitively Selected by FAA Administrator:** September 11, 1997
Operational through September 11, 2007
- **Single source contract authority:** \$100M cap
- **Technology Areas:**
 - Maintenance, Inspection, and Repair
 - Crashworthiness
 - Propulsion and Fuel Systems Safety Technologies
 - Advanced Materials

Sponsor: FAA Airport & Aircraft R&D Division

Members: Phase II – Equal University Partners (following list)



COE for Airworthiness Assurance Phase II - University Members

Arizona State University
Baylor University
Carnegie Mellon University
Embry-Riddle Aeronautical University
Florida International University
George Washington University
Iowa State University
Johns Hopkins University
Lehigh University
Mississippi State University
New Jersey Institute of Technology
North Carolina A&T State University
Northwestern University
Ohio State University
Ohio University
Pennsylvania State University

Purdue University
Rutgers University
Tuskegee University
University of Arizona
University of California at Berkeley
University of California at Los Angeles
University of California at Santa Barbara
University of Dayton
University of Maryland
University of Missouri at Columbia
University of North Dakota
University of Utah
University of Washington
Wayne State University
Wichita State University



COE for Airworthiness Assurance Phase II – Industry Affiliates

**ABX Air, Inc.
AirTran Airways
Alaska Airlines
Aloha Airlines
American Airlines
American Eagle
Atlantic Coast Airways
Boeing
Bombardier Aerospace-
Learjet
Cape Air
Cessna
Continental**

**Delta
Federal Express
General Electric
Honeywell
JetBlue Airways
Lufthansa
Nantucket Airlines
Northwest
Pratt & Whitney
Raytheon
United Airlines
US Airways**



COE for Operations Research (NEXTOR)

- **Competitive Selection by FAA Administrator: 1996 through 2007**
- **Contract authority: \$10M - Phase I + \$50M - Phase II**
- **Technology Areas:**
 - **Air Traffic Management and Control**
 - **Human Factors**
 - **System Performance and Assessment Measures**
 - **Safety Data Analysis**
 - **Communications, Data Collection and Distribution**
 - **Aviation Economics**

Sponsor: FAA Hdq - Technology Development & Operations Research

Members: Un of California - Berkeley, MIT, VPI, Un of Maryland, Geoge Mason Un

University Contact: University of California at Berkeley

Mark Hansen: mhansen@ce.berkeley.edu



COE for Operations Research Partners and Affiliates

University Partners

Air Force Institute of Technology
Rensselaer
San Jose State University
University of Michigan
University of Minnesota
University of Rochester
University of Southern California
University of Texas at Austin

Industrial Affiliates

The Boeing Company
California Department of Transportation
Draper Laboratory
Federal Express
Honeywell
Leigh Fisher Associates
Logistics Management Institute
Maryland Aviation Administration
Los Angeles World Airports
Massachusetts Port Authority
Metron Aviation, Inc.
Northrop Grumman

Sabre

San Francisco
International Airport
Seagull Technology
Southern California
Association of
Governments
Virginia Department of
Transportation



COE for Airport Technology (CEAT)

- **Competitively Selected by the FAA Administrator: 1995**
- Originally established as the COE for Airport Pavement Technology R&D
- **Technology Areas:**
 - **High Performance Concrete**
 - **Non-destructive Evaluation of Pavements**
 - **Stabilized Base Material**
 - **Structural Behavior and Modeling**
 - **Airport Pavement Design Concepts/Procedures**
 - **Wildlife Research**

Sponsor: FAA Airport Technology R&D Group

Members: University of Illinois, Rensselaer Polytechnic Institute;

with Public Partners: O'Hare Modernization Program and the City of Chicago

University Lead: University of Illinois at Urbana-Champaign

(Located at the former Chanute Air Force Base, Rantoul, ILL)

David A. Lange, dlange@uiuc.edu



COE for Airport Technology University Members

CENTER PARTNERS

University of Illinois at Urbana Champaign
Rensselaer Polytechnic Institute

PUBLIC PARTNERS

O'Hare Modernization Program
City of Chicago



Joint Center for Computational Modeling of Aircraft Structures

- **Members Designated by Congress: Operational 1993 through 1996**
- **Technology areas funded through matching grants:**
 - **Widespread Fatigue-Damage**
 - **Residual-Life and Residual-Strength Estimations**
 - **Mechanical and Composite-Patch Repairs**
 - **Life-Enhancement Methodologies**
 - **Discrete Source Damage**

Rutgers University and Georgia Institute of Technology



P.L. 101-508 REQUIREMENTS AND OUTCOMES

FAA Requirements: *
geographic equity in the distribution of funds and location of Centers; *
consideration of minority and special groups.

Universities Must: *
match FAA grant funds from non-federal sources;
* interpret, publish, and disseminate research results.

Together we...

- strategically focus and coordinate a Nat'l research agenda with public/private partners for 10 yrs,
- avoid duplication of effort using a tested business strategy and trusted structure,
- augment resources with the best and brightest throughout the U.S.,
- leverage scarce gov't funds,
- educate and train a pool of aviation professionals for the next generation.



Joint COE Meetings

- 1) **Hosts 2001:** GE Aircraft Engines, Cincinnati, Ohio w The Ohio State University
- 2) **Hosts 2002:** Boeing Corporation, Raytheon, Bombardier, Cessna, Wichita, Kansas
with Wichita State University
Special Guests: US Transportation Secretary Norman Y. Mineta, US Congressman Todd Tiahrt
- 3) **Hosts 2003:** The Boeing Company, Harris Corporation, Atlantic Southeast Airlines, Aviation Management Associates, Galaxy Scientific Corp., Sensis Corporation, Jeppesen with Embry - Riddle Aeronautical University
Keynote Speaker: Ambassador Edward Stimpson, ICAO (retired)
- 4) **Hosts 2005:** Harris Corporation, The Boeing Company, Cessna Aircraft Company, Pratt & Whitney, Lockheed-Martin, Raytheon, Tandberg Inc., General Electric, Gulfstream Aerospace Corporation, Galaxy Scientific Corporation, Engine Titanium Consortium (ETC), Aviation Management Associates, Center for Advanced Transportation Systems Simulation (CATSS) with the University of Central Florida
Keynote Speaker: Ambassador Thomas Pickering, Sr VP, International Relations, The Boeing Co.
Dinner Speaker: The Honorable John Goglia, NTSB (retired)

Student Awards: Student Dinner, Poster Contests, and Awards provided and presented by industry affiliates. DOT & FAA COE Outstanding Students and Faculty of the Year recognized, Paper Competitions held.

