



FAA Centers of Excellence Center for General Aviation Research (CGAR)



November 9, 2006



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....”

COE Benefits



- Promotes establishment of academic, industry and government networks ready as needed to enhance the safety, security and efficiency of the national airspace system
- Augments internal resources and leverages scarce funds
- Expands the pipeline for critical skills and enhances recruitment
- Provides a strategy and a structure to conduct research, education and training
- Advances U.S. technology and expertise



Unique Funding Combination



- **COE Research Grants require matching funds – mandated by Congress**
- **Contract - IDIQ**
- **Centers may receive funding from federal, state or local government agencies, and industry partners.**





FAA Centers of Excellence Geographic Distribution



AIRLINER CABIN ENVIRONMENT RESEARCH

Auburn University – Administrative Lead

Harvard University – Technical Co-Lead

Purdue University – Technical Co-Lead

Boise State University

Kansas State University

University of California at Berkeley

University of Medicine & Dentistry of New Jersey

NOISE AND EMISSIONS MITIGATION

Massachusetts Institute of Technology - Lead

Boise State Univ.

Florida International Univ.

Penn State Univ.

Purdue Univ.

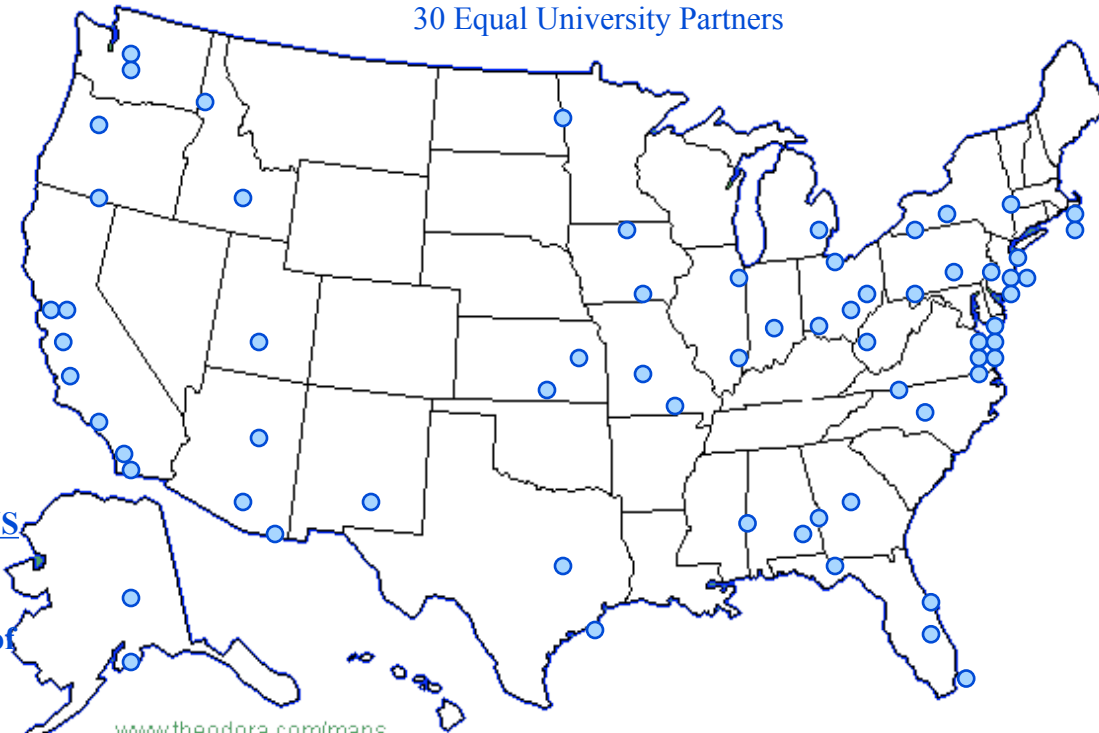
Stanford Univ.

Univ. of Central Florida

Univ. of Missouri-Rolla

AIRWORTHINESS ASSURANCE

30 Equal University Partners



www.theodora.com/maps

AIRPORT TECHNOLOGY

University of Illinois - Lead

Embry-Riddle Aeronautical University

North Carolina A&T

Northwestern University

GENERAL AVIATION

Embry Riddle Aeronautical University – Lead/Prime

Florida A&M University

University of Alaska

University of North Dakota

Wichita State University

ADVANCED MATERIALS

University of Washington/ Wichita State University/ Joint-Leads

Edmonds Comm. College

Northwestern University

Purdue University

Oregon State University

Tuskegee University

UCLA

University of Delaware

Washington State University

OPERATIONS RESEARCH

Co-Leads

University of California at Berkeley

Massachusetts Institute of Technology

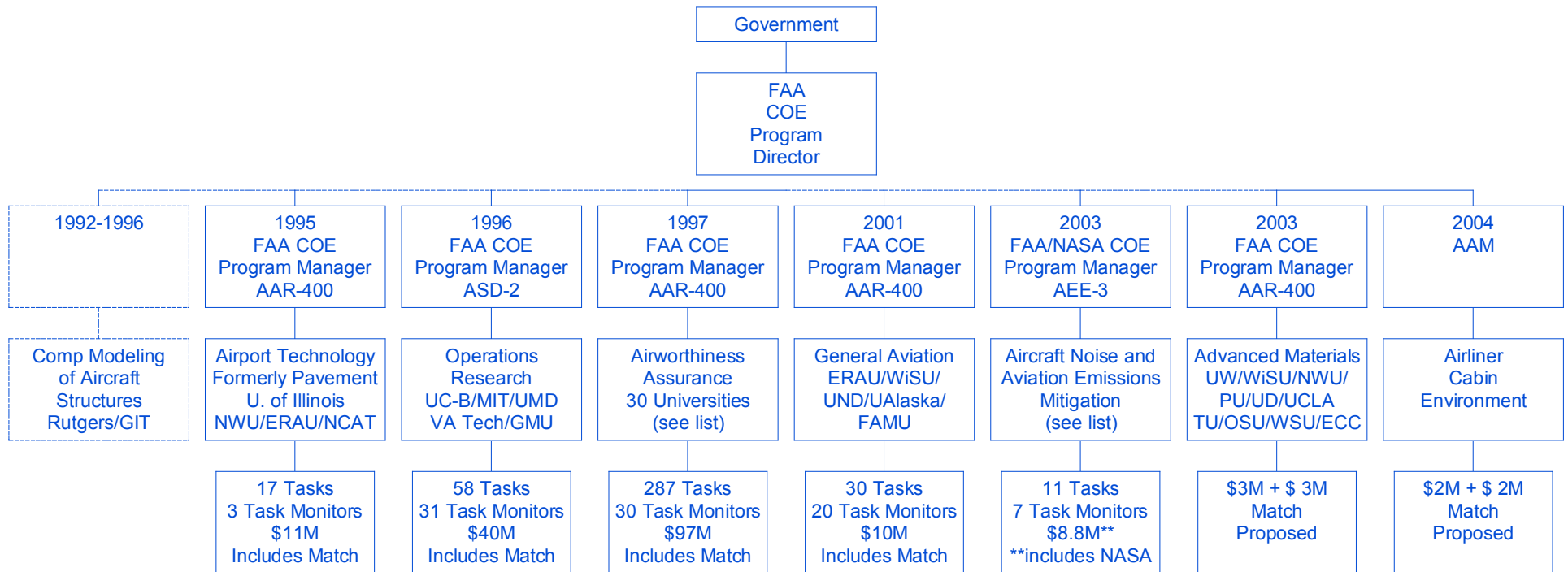
University of Maryland

Virginia Polytechnic Institute

George Mason University



FAA Centers of Excellence Structure





Current COE Members



The Centers of Excellence has more than 55 Member Universities and Colleges.

Air Force Institute of Technology
Arizona State University
Baylor University
Boise State University
Carnegie Mellon University
Edmonds Community College
Embry-Riddle Aeronautical University
Florida Agricultural & Mechanical University
Florida International University
George Mason University
Iowa State University
Harvard University
Johns Hopkins University
Lehigh University
Massachusetts Institute of Technology
Mississippi State University
Naval Post Graduate
New Jersey Institute of Technology
North Carolina A&T University

Northwestern University
Ohio University
Oregon State University
Pennsylvania State University
Princeton University
Purdue University
Rensselaer Polytechnic Institute
Rutgers, The State University of New Jersey
San Jose State University
Stanford University
SUNY at Buffalo
The Ohio State University
The University of Alaska
Tuskegee University
University of Arizona
University of California at Berkeley
University of California at Los Angeles
University of California at Santa Barbara
University of Central Florida

University of Dayton
University of Delaware
University of Illinois – Urbana Champaign
University of Maryland
University of Michigan
University of Minnesota
University of Missouri - Columbia
University of Missouri - Rolla
University of North Dakota
University of Rochester
University of Southern California
University of Texas at Austin
University of Utah
University of Washington
Virginia Polytechnic Institute
Washington State University
Wayne State University
Wichita State University



What is CGAR?

*The FAA Air Transportation
Center of Excellence for
General Aviation Research*

Membership



Embry-Riddle Aeronautical University
Daytona Beach and Prescott campuses



University of North Dakota



University of Alaska
Anchorage and Fairbanks campuses



Wichita State University





Synergistic Relationships



- Research topics and all pertinent information is shared and communicated via cgar.org
- Mission Critical topics are assigned by the FAA
- Joint projects are initiated by a team lead (or PI)
- Collaborative research projects enable member universities to conduct research that they would otherwise be unable to do by themselves



Program Activity



- **\$14.3 Million awarded to date, grant and IDIQ contract**
- **64 Projects**
 - **Operational Loads Monitoring Program**
 - **Helicopter SNI/PVFR flight test (ADSB technology)**
 - **Technically Advanced Aircraft (FAA inspector training)**
 - **UASs (Unmanned Aerial Systems)**
 - **HUMS (Health Usage Monitoring Systems)**
 - **FAA Industry Training Standards**
 - **Aging Aircraft**
 - **EMAS**



New Grant activity Awarded in FY2006



- **Wildlife Strike Database**
- **Flight Loads**
- **Training Stds. Development for GA Aircraft**
- **Detection of CO**
- **ADSB**
- **Helicopter Navigation Flight training**
- **Evaluation Instructor Training Course**
- **TAA**
- **RALS**
- **FITS**
- **Airport Funding**
- **Propulsion - Enhanced Jet Exhaust**
- **Technology Survey on UAS Propulsion**
- **Compression Ignition Engine Cert. Issues**
- **Helicopter TAWS and EVS Flight Training**
- **ASI Course Development/Safety Management Systems (SMS)**



IDIQ and Other Activity



- **ASI Inspector**
 - **Light Twin Refresher**
 - **FAA ASI Indoctrination**
 - **Technically Advanced Aircraft ASI Training**
 - **Upset Recovery Training**
- **Health Usage Monitoring Systems (HUMS)**
- **Total in New Activity Awards - \$4.3 Million**



Who's Involved



Research Advisory Council

The Advisory council meets to discuss the research needs of industry



AAAAE





Funding Process

- **Agency Sponsor Required**
- **Agency Submits Request to CGAR**
- **CGAR Forms Team from member Universities, Affiliates, and Industry to respond to Agency Request**
- **Grant**
 - **A Statement of Work (SOW) and the associated budget is developed jointly by the CGAR team and FAA sponsor and submitted through CGAR**
 - **Requires matching funds**
 - **Best effort**
 - **Project submitted to CGAR**
 - **Once submitted funding typically takes 2 – 3 weeks to work through the CGAR and FAA process**



Funding Process



- **Contract**
 - **Agency submits statement of work to CGAR**
 - **CGAR team chooses whether or not to respond**
 - **Team develops a work response and associated budget**
 - **Matching is negotiated**
 - **Hard deliverables are defined**
 - **Project submitted to CGAR**
 - **Once submitted funding typically takes 2 – 3 months to work through the CGAR and FAA process**



Web Site



www.cgar.org

