



The Center for Air Transportation Systems Research (CATSR) fosters excellence in *research* and *education* in Air Transportation (AT).

CATSR was established in 2003 by the Volgeneau School of Information Technology & Engineering (SITE) at George Mason University (GMU)

This brochure includes the following information about CATSR:

1. Overview of the Center
2. Governance
3. Membership, Sponsorship & Endowment

1 OVERVIEW OF THE CENTER

The objective of the Center is to foster excellence in *research* and *education* in the Air Transportation. The focus of this analysis is air transportation as an economic and technological “system”. Research includes an analysis of networks, industrial sector economics, innovation and productivity in networked system, and rare-event safety analysis.

Research

CATSR actively promotes and funds cutting-edge scholarly research on topics of vital interest to the air transportation sector.

Findings are published in the leading academic and industry journals, conferences, books, and magazines.

Research is conducted by Faculty, Post-Docs, and Students from multiple disciplines including System Engineering, Operations Research, Economics, Psychology, Public Policy and Entrepreneurship.

CATSR research is organized into the following 5 areas:

1. Strategic Planning and Industry Sector Analysis:
 - Analytical techniques to model and understand the dynamics of the industry sector are being developed. Emphasis on economic and system performance modeling for policy and investment. Example applications include strategic plans and cost /benefit analyses for

airports, FAA, airlines, and the air traffic control supply chain vendors.

2. Airport & Airspace Simulation:

- Analytical techniques and simulation tools to analyze the performance and operation of airports and airspace are being developed and adapted.

3. System Safety Analysis:

- Analytical techniques and tools to analyze the safety risk in the air transportation system. Advanced probabilistic safety assessment techniques have been applied to runway operations, arrivals on parallel runways, aircraft Wake Vortex separation procedures, and airport and passenger security. Techniques for quantifying complex tradeoff between system performance and system risk have been developed (e.g. runway arrival capacity vs. simultaneous runway occupancy).

4. Aviation Environmental Analysis:

- Analytical techniques and tools to assess and address environmental impact of air transportation operations.

5. Aviation Security:

- Application of “deterrence theory” to air transportation. Specific applications to airports. Also, application of economic and innovation theory to terrorism and terrorism defense.

Education and Scholarship

CATSR works with the faculty in the Volgeneau School of Information Technology and Engineering (SITE) to foster excellence in system engineering and operations research education.

CATSR helps develop curriculum for the System Engineering and Operations Research Department, ranked 4th in the nation by the ORMS magazine.

In keeping with its commitment to excellence in education, CATSR awards fellowships and scholarships to promising students. Many of these awards have been funded by CATSR research sponsors.

Meetings and Lecture Series

CATSR plays a leading role in the discussion and formulation of air transportation public policy and enterprise strategic plans. The Center sponsors and participates in a variety of seminars and conferences throughout the year with organizations such as NEXTOR – FAA Center of Excellence, Informs, Agifors, AIAA, IEEE, ICRAT.

CATSR hosts a Government/Industry/Academia Day, *Sustaining Air Transportation: Issues, Challenges and Opportunities*, which brings prominent executives, decision-makers, analysts and researchers together for intense discussion and briefings on cutting-edge topics.

CATSR also hosts Members Meetings in the Spring & Fall. These Meetings provide unequalled networking opportunities and an efficient forum for students, faculty and members to discuss relevant industry concerns.

CATSR and the Volgeneau School for ITE support research and education programs regional high schools and colleges.

2 GOVERNANCE

The Center for Air Transportation Systems Research (CATSR) is governed by two independent boards: (1) The Executive Board and (2) Research Advisory Board.

Executive Board, appointed for 1, 2, or 3 years terms, provides oversight of the strategic direction of the Center (includes research focus) and coordinates strategic relationships with sector

Current members:

- The Honorable Carol Carmody
(Chair, Board Member, National Academy of Public Administration, former vice chair and member of the National Transportation Safety Board (NTSB), former U.S. Representative to the Council of the International Civil Aviation Organization)
- The Honorable Langhorne Bond
Bio
- The Honorable Kenneth Mead
Bio (former Inspector General, Department of Transportation)
- Jim Wilding
Bio (former President Metropolitan Washington Airport Authority)
- Glenn McDougal
Bio (President MBS Ottawa)
- tbd

Research Advisory Board provides strategic and tactical direction on the topics, relevance and quality of the research conducted by the Center.

- Chair – tbd
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3 MEMBERSHIP ON THE RESEARCH ADVISORY BOARD

We invite you to consider becoming a member of the Research Advisory Board of the Center for Air Transportation Systems Research (CATSR). Membership includes the following privileges:

- 1. Participation on the Joint Executive/Research Advisory Board Meetings**
 - sets strategic direction of the Center and coordinates strategic relationships with sector
 - coordinate research portfolio with strategic direction of sector
 - meets in the Summer
- 2. Participation on the Research Advisory Board Meetings**
 - inform the research portfolio conducted by the Center
 - validate the relevance and quality of ongoing research
 - meets in Spring and Fall
- 3. Participation in Center Government/Industry/Academia Day - *Sustaining Air Transportation: Issues, Challenges and Opportunities***
 - researchers and members share results and dialogue with government, industry, academia, and media
- 4. Participation in weekly Center Research Seminars**
 - Technical research presentations by faculty and students
- 5. Priority access to research papers published in our Working Paper series**

All memberships in CATSR are tax-deductible:

Member Research Advisory Board \$ 30,000 (Annual)

4 SPONSORSHIP & ENDOWMENT

Sponsor Post-Doc Researcher	\$ 75,000 (annual)
Sponsor Faculty Researcher	\$ 250,000 (annual)
Naming Rights - Government/Industry/Academia Day	\$ 250,000 (annual)
Naming Rights - Center	\$1,500,000 (one time endowment)
Endowed Chair	\$1,000,000 (one time endowment)