

OFCM Special Session:

***Uncertainty in Atmospheric Transport
and Diffusion (ATD) Models***

*In conjunction with the
9th Annual GMU Conference on Transport and Dispersion Modeling*

July 19, 2005

Setting the Stage

Mr. Samuel P. Williamson
Federal Coordinator for Meteorology

Acknowledgements

Special Thanks to:

**Dr. Zafer Boybeyi
George Mason University**

**Members of the Joint Action Group for Selection and
Evaluation of Atmospheric Transport and Diffusion
Models**

**Members of the Joint Action Group for Atmospheric
Transport and Diffusion Modeling (Research and
Development Plan) (JAG/ATD(R&DP))**

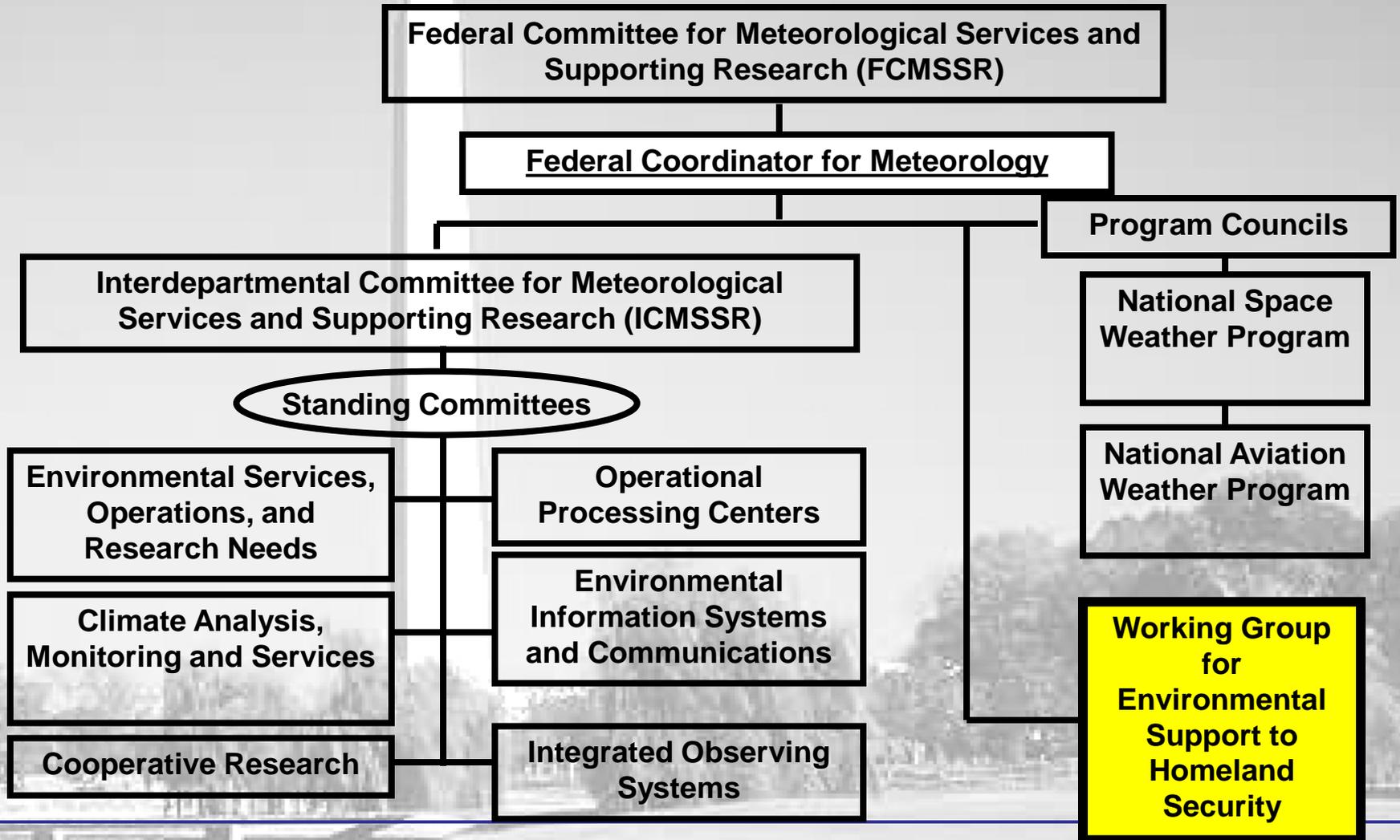
Outline

- **OFCM Overview**
- **Accomplishments in Atmospheric Transport and Diffusion (ATD)**
- **Session Objectives**
- **The Way Ahead**

OFCM Overview -- *Mission*

- To ensure the effective use of federal meteorological resources by leading the systematic coordination of operational weather requirements, services, and supporting research, among the federal agencies
- High-level focus on:
 - Needs and Requirements
 - Issues and Problems
 - Studies, Reports, Plans, and Handbooks
 - Crosscut Reviews, Assessments, and Analyses

FEDERAL METEOROLOGICAL COORDINATING INFRASTRUCTURE



Coordinating Infrastructure

OFCM Partners

Departments of:

- Agriculture
- Commerce
- Defense
- Energy
- Homeland Security
 - FEMA
 - Coast Guard
- Interior
- State
- Transportation

Independent agencies:

- Environmental Protection Agency
- National Aeronautics and Space Administration
- National Science Foundation
- National Transportation Safety Board
- Nuclear Regulatory Commission

Executive Office of the President:

- Office of Management and Budget
- Office of Science and Technology Policy

Accomplishments

- In January 2002, OFCM formed the Joint Action Group for the Selection and Evaluation of ATD Models (JAG/SEATD)
- In August 2002, JAG/SEATD published its report: *Atmospheric Modeling from Weapons of Mass Destruction: Response by Federal Agencies in Support of Homeland Security*. The FCMSSR endorsed this report in October 2002
- In June 2003, OFCM conducted a special session at the 7th Annual GMU Atmospheric Transport and Dispersion (AT&D) Conference as a first step in addressing the JAG/SEATD report's recommendations
- In October 2003, formed the Joint Action Group for ATD Modeling (Research and Development Plan)

Accomplishments

- In July 2004, OFCM conducted a special session at the 8th Annual GMU AT&D Conference to:
 - Present the results of the JAG/ATD(R&DP)
 - Receive feedback in time for incorporation in the final report
 - Provide an opportunity for DHS/S&T to describe the Interagency Modeling and Atmospheric Assessment Center (IMAAC)
- In September 2004, OFCM published the JAG/ATD(R&DP) report, *Federal Research and Development Needs and Priorities for Atmospheric Transport and Diffusion Modeling (FCM-R23-2004)*. The FCMSSR endorsed this report in December 2004
- In September 2004, OFCM conducted a national, multi-sector conference on urban meteorology, *Challenges in Urban Meteorology: Forum for Users and Providers*

Session Objectives

- **Facilitate a discussion of uncertainties in ATD modeling systems that:**
 - **Incorporates academic and private sector inputs**
 - **Accounts for uncertainty in meteorological observations and models and in dispersion models**
- **Help Federal agencies striving to improve their ATD modeling systems to implement the recommendations made by the OFCM JAG/ATD(R&DP)**

The Way Ahead

- **Complete the strategy for ATD modeling improvements and present it to the FCMSSR. Key elements of the strategy are:**
 - **A core set of ATD modeling systems**
 - **Recovery of existing ATD data**
 - **Common framework for model evaluation**
 - **ATD Test Beds**

The Way Ahead

- **Through partnership and collaboration within the Federal meteorological community and its customers, OFCM will:**
 - **Continue to identify shortfalls in urban meteorology**
 - **Help to organize improvements across all applicable focus areas that will better support users in the urban environment**

Backup Slides

OFCM Overview -- *Key Focus Areas and Agency Priorities*

- Aviation Weather
- Climate Analysis, Monitoring and Services
- Cooperative Research
- Environmental Services
- **Environmental Support to Homeland Security**
- Information Technology and Communications
- Modeling and Prediction
- Observing Capabilities
- Space Weather
- Weather Information for Surface Transportation

Coordinating Infrastructure

OFCM Affiliations

National Research Council (NRC)
Board on Atmospheric Sciences and Climate (BASC)
Climate Research Committee (CRC)

University Corp. for
Atmospheric Research
(UCAR)

US Weather Research
Program (USWRP)

National Center for Atmospheric
Research (NCAR)

American
Meteorological
Society (AMS)

US Climate Change
Science Program
(USCCSP)

National Science and Technology Council (NSTC)
Committee on the Environment and Natural
Resources (CENR)
Subcommittee on Disaster Reduction (SDR)

George Mason
University (GMU)