

# ASDL History

- The Aerospace Systems Design Laboratory (ASDL) was founded in 1992 to bridge the gap between academia and industry research perspectives
- Since its inception, ASDL has grown to be one of the nation's premier entities for aerospace systems and complex design
- ASDL is part of the Georgia Institute of Technology School of Aerospace Engineering, which is one of the original Guggenheim schools

# Georgia Tech Program Organization



- Georgia Tech is divided into a set of Academic Units and the Georgia Tech Research Institute
- There are 6 colleges within Georgia Tech, with each having a number of individual schools
- ASDL is an academic research lab within the School of Aerospace Engineering, but plays the role of system integrator campus-wide

# Interdisciplinary Research Institutes

Georgia Tech is home to 11 academic Interdisciplinary Research Institutes (IRIs) responsible for bringing together a mix of researchers – spanning colleges, departments, and individual labs – around a single core research area. IRIs also connect a large portfolio of basic and applied research programs, support world-class research facilities and laboratories, engage Georgia Tech students, and collaborate with government and industry research partners.

Parker H. Petit Institute  
for Bioengineering &  
Bioscience



Institute of Data  
Engineering and  
Science



Institute for  
Electronics and  
Nanotechnology



Strategic  
Energy Institute



Institute for  
Robotics and  
Intelligent Machines



Institute for  
Materials



Renewable  
Bioproducts  
Institute

Institute for  
Information Security  
and Privacy



Institute for  
People and  
Technology

Brook Byers Institute  
for Sustainable  
Systems



Manufacturing  
Institute



# The ASDL Vision

- In a broad sense, the basic aim of current and future research at ASDL is to be an educational leader in advanced systems architecting, engineering, design, integration and operations, decision making, digital engineering, data and visual analytics
- ASDL aims to accomplish this by fulfilling several roles:
  - Develop the next generation of highly qualified engineers for academia, industry, and government
  - Apply cutting edge for multi-disciplinary, physics-based design methods suitable for the design of all types of complex systems and systems of systems
  - Provide independent and credible assessment capabilities using integrated, quantifiable methodologies to government, and industry

# ASDL Organizational Chart



Chief Engineer  
Neil Weston

Academic Affairs Manager  
Adrienne Durham

Research Portfolio Manager  
Megan Scheidt

Director  
**Dimitri Mavris**

Front Office

Program Initiation Manager: Angela Steltzer

Finance Manager: Glenn Campopiano

Lab Operations Manager: Tanya Ard-Smith

System Administrator: Diego Remolina

Advanced Configurations  
Division Chief: Jimmy Ray

Transformative Aviation Concepts  
Division Chief: Simon Brčeno

Civil Aviation Research  
Division Chief: Michelle Kirby

Digital Engineering  
Division Chief: Olivia Pinon Fischer

Propulsion & Energy  
Division Chief: Jon Gladin

Defense & Space  
Division Chief: Alicia Sudol

Advanced Methods  
Division Chief: Elena Garcia

- Flight Physics
- Systems Analysis
- Subsonics
- Supersonics
- VTOL

- Aviation Transportation System of Systems
- Advanced Airspace Concepts
- Aviation Safety and Certification
- UAS Operations Research

- Commercial Fleet Ops and Forecasting
- Green Energy and Sustainable Aviation
- Aviation Environmental Policy
- Airline Operations
- Air Traffic Control & Management

- Living Habitats & Smart Cities
- Digital Twins
- Visualization Analytics
- Machine Learning & Artificial Intelligence
- Virtual Reality & Augmented Reality

- Aerothermo-Mechanical Design
- Terrestrial Power Systems
- Subsystems & Aeropower
- Controls & Operability

- Military Operations & Logistics
- Space Transportation System
- Space Architectures
- Defense Acquisition
- Missile Systems
- Naval Systems
- Rocket Based Propulsion
- Hypersonics

- Model Based Systems Engineering
- Large Scale Optimization
- Transient and Dynamic Modeling
- System Design Methods
- Uncertainty Quantification & Management
- Strategic Planning
- Decision Science
- Manufacturing

7 Divisions

40 Branches

50 Research Engineers

120 Undergrads

200 Masters & PhD Students

25 Senior Graduate Researchers + 70 Graduate Researchers + 55 Graduate Research Associates + 50 Graduate Research Assistants

## Experimental Facilities

ADEPT

Drone-X

Design, Build, Fly Lab

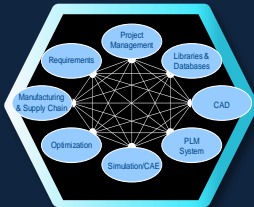
MakerSpace Lab



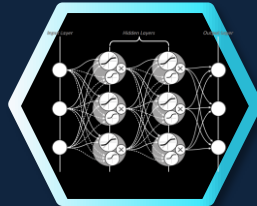
# Strategic Initiatives

Nine strategic initiatives guide ASDL's constantly expanding research portfolio

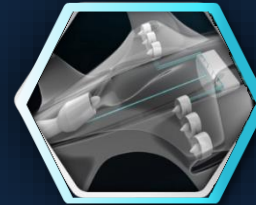
Model-Based Systems Engineering



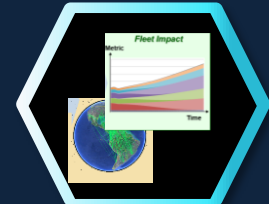
Machine Learning



Hybrid Electric Vehicles



Environmental Assessments



Digital Engineering



Autonomous Systems



Advanced Concept Design



SoS & Airspace System Modeling



Certification by Analysis

