

## Rankings

**#1** **Producer of Masters and Doctoral Degrees**  
National Institute of Aerospace Survey (2015)

**#2** **Graduate Program Ranking for 2018**  
U.S. News & World Report (2017 & 2018)

## Getting to Work: The AE Labs

- Aerospace Systems Design Lab
- Aerothermodynamics Research & Technology Lab
- Air Transportation Lab
- Autonomous Control & Decision Systems Laboratory
- Ben T. Zinn Combustion Lab
- Center for Advanced Machine Mobility
- Cognitive Engineering Center
- Computational Combustion Lab
- Computational Solid Mechanics Lab
- Decision & Control Laboratory
- Dynamics & Control Systems Lab
- Experimental Aerodynamics Group
- High-Power Electric Propulsion Lab
- Nonlinear Computational Aeroelasticity Lab
- Rotorcraft Flight Simulator Lab
- Space Systems Design Lab
- Structural Dynamics and Smart Structures Lab
- Symbolic Computation Lab
- UAV Research Facility
- Vertical Lift Research Center of Excellence
- Vibration and Wave Propagation Lab

Learn more at [ae.gatech.edu/ae-labs-centers-collaborative-groups](http://ae.gatech.edu/ae-labs-centers-collaborative-groups)



“What attracted me to Tech after I finished my undergrad work was that I could learn how to engineer the product, the system, and the applications that industry actually needs. I could study with a professor who’s built satellites for fun or with another who’s an expert on the Black Hawk. There’s simply nothing like it.”

- Seth Gordon, Ph.D. AE '17

See what more of our graduates have to say about GT-AE:  
[ae.gatech.edu/after-ae-success-stories](http://ae.gatech.edu/after-ae-success-stories)

# Georgia Tech Daniel Guggenheim School of Aerospace Engineering



**DEFINING THE FUTURE**

THE GT-AE  
GRADUATE PROGRAM

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## THE GRADUATE DISCIPLINES @GT-AE

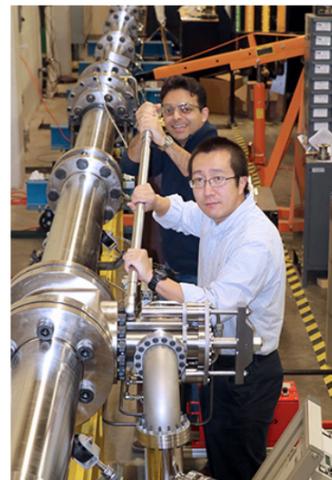
The Daniel Guggenheim School of Aerospace Engineering is committed to recruiting graduate students who share our passion for tackling impossible problems — the ones that will define the future of aerospace engineering. Each year, close to 500 highly qualified graduate students work with GT-AE faculty and sponsors on a variety of research projects, from spacecraft design to composite materials research and optimized

flight management. The School focuses on six disciplines, which serve as the launching points for many rich cross-disciplinary collaborations with other GT schools and with institutions around the world. Those disciplines are: propulsion & combustion; aerodynamics & fluid mechanics; structural mechanics & materials; aeroelasticity & structural dynamics; flight mechanics & controls; and systems design & optimization.

Read more about GT-AE research: [ae.gatech.edu/ae-research-disciplines](http://ae.gatech.edu/ae-research-disciplines)  
Get to know GT-AE faculty: [ae.gatech.edu/people](http://ae.gatech.edu/people)

### Propulsion & Combustion

The propulsion and combustion (PC) group conducts basic and applied research in a wide variety of areas. Specific projects include active control of unsteady phenomena in turbine engine combustors and liquid-fueled rocket engines; microgravity combustion; development of nonintrusive, optical-based diagnostic and sensor techniques; measurement and control of soot and particulate emissions; underwater explosions; combustion mechanisms of composite solid propellants, focusing on modern energetic ingredients used in solid rockets and missiles; pulse combustion; and efficient modeling of realistic, turbulent, single- or two-phase combustion systems using large eddy simulations. Find out more by visiting the profiles of the faculty in this discipline: **Krishan Ahuja, Jeff Jagoda, Tim Lieuwen, Suresh Menon, Joseph C. Oefelein, Jerry Seitzman, Wenting Sun, Mitchell Walker, Vigor Yang, Ben Zinn.**



### Aerodynamics & Fluid Mechanics

Aerodynamics and Fluid Mechanics include the study of the overall aerodynamic properties of vehicles and the performance of air-breathing engines, rockets, propellers and rotors. The School of Aerospace Engineering is conducting cutting-edge research that leads to improved understanding of the detailed physical phenomena that control these flows. Find out more by visiting the profiles of the faculty in this discipline: **Krishan Ahuja, Narayanan Komerath, Suresh Menon, Stephen Ruffin, Lakshmi Sankar, Jerry Seitzman, Marilyn Smith, Pui-Kuen Yeung.**



### Structural Mechanics & Materials

This group offers graduate studies and research in structural mechanics and material behavior (SMM) of aero-structures. Specific areas include computational mechanics, composite structures, fracture and fatigue, damage tolerance and failure prediction, experimental mechanics, thermal and environmental effects and non-destructive evaluation, structural stability (buckling/postbuckling), adaptive structures, structural health monitoring, and system identification. Find out more by visiting the profiles of the faculty in this discipline: **Claudio Vinicius Di Leo, Sathya Hanagud, Dewey Hodges, George Kadomateas, Graeme J. Kennedy, Julian Rimoli, Massimo Ruzzene, Min-Feng Yu.**



### Aeroelasticity & Structural Dynamics

The field of aeroelasticity deals with interactions among aerodynamics, structural mechanics, and dynamic phenomena. The closely related field of structural dynamics examines interactions between structural mechanics and dynamics. At Georgia Tech, research in aeroelasticity and structural dynamics (ASD) spans the areas of fixed- and rotary-winged aircraft as well as spacecraft. Find out more by visiting the profiles of the faculty in this discipline: **Dewey Hodges, Sathya Hanagud, Massimo Ruzzene, Marilyn Smith.**



### Flight Mechanics & Controls

Control engineering is concerned with modifying the behavior of dynamical systems such as advanced high performance tactical fighter aircraft, large flexible space structures, and variable-cycle gas turbine aeroengines to achieve desired goals. Research in the School concentrates on three approaches: fixed architecture control, robust control and adaptive and neuro-fuzzy control. Find out more by visiting the profiles of the faculty in this discipline: **John-Paul Clarke, Mark Costello, Karen Feigh, Eric Feron, Wassim Haddad, Marcus Holzinger, J.V.R. Prasad, Evangelos Theodorou, Panagiotis Tsiotras.**



### Systems Design & Optimization

Design encompasses a spectrum of aerospace-related fields including traditional aerospace disciplines (structures, propulsion, aerodynamics, controls, acoustics, etc.), performance (mission analysis, payload, etc.), and life-cycle interests (economics, manufacturing maintainability, supportability, etc.). Overall, a designer tries to achieve performance goals and customer and engineering requirements in the presence of conflict and uncertainty. The long-range vision of the graduate research effort is to develop a virtual design environment that permits a designer to easily make the decisions leading to robust aerospace solutions. Find out more by visiting the profiles of the faculty in this discipline: **John-Paul Clarke, Mark Costello, Brian German, Brian Gunter, Marcus Holzinger, Graeme J. Kennedy, Glenn Lightsey, Dimitri Mavris, Joseph Saleh, Daniel Schrage.**

