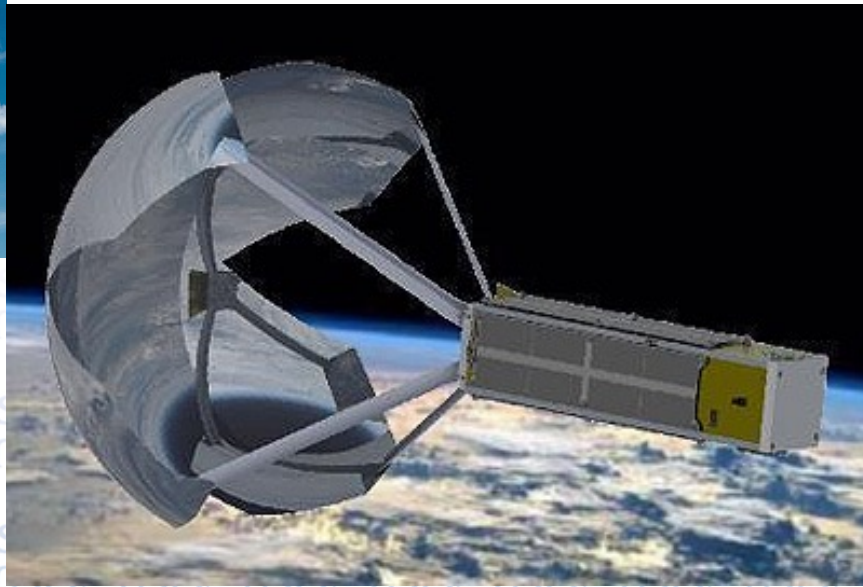


Aerospace Engineering Department 1987 – 2022



Dr. Nikos J. Mourtos
Chair



AE Department History

1985: Dean Pinson asks Dr. Desautel to develop
AE Program + AE Department

1987: AE Department + BSAE Program open

@ the time: only AE Program from Seattle to Boulder to Los Angeles

Dr. Mourtos: 1st tenure-line faculty member hired

1989: first (transfer) students graduate w. BSAE degrees

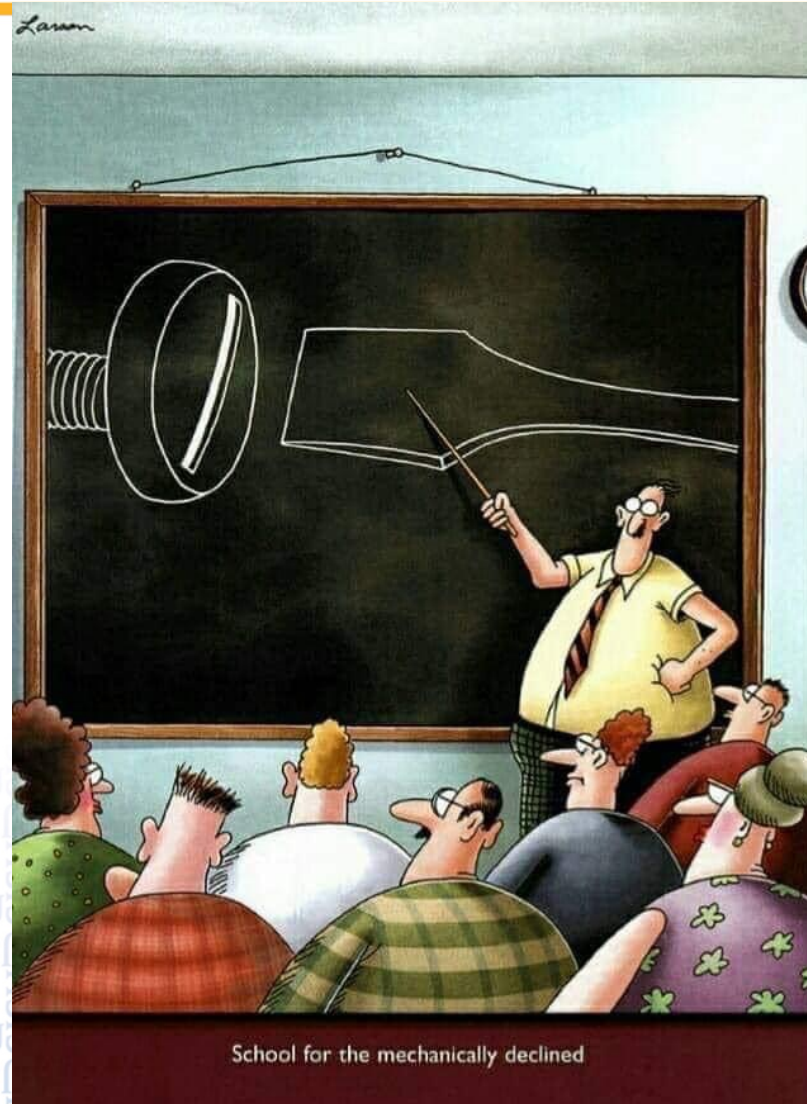
Dr. Hunter: 1st full-time lecturer hired

1991: BSAE ABET accreditation; ~ 400 majors

1992: MSAE Program open; *emphasis on satellite subsystems*

Program Distinctives

- Innovative, broad curriculum supported by state-of-the-art laboratories.
- *Philosophy*: integrate analysis + computation + design + experimentation, supported by wide-ranging hands-on laboratory experience and projects.



Capstone Senior Design Experience (8 units)			
Aircraft Design – AE 171 A&B Global & Societal Issues in Engr. Practice – Engr. 195A&B			Spacecraft Design – AE172 A&B Global & Societal Issues in Engr. Practice – Engr. 195A&B
Elective (3 units) AE 110 – Space Systems Engineering, AE142 – Astrodynamics, AE149–Advanced Dynamics & Simulation, AE166 – Rocketry, AE173 – UAV Design			
Aerodynamics & Propulsion (14 units)	Aerospace Structures & Materials (10 units)	Aerospace Dynamics & Controls (15 units)	Electronics (3 units)
AE167 – Propulsion AE164 – Aerothermodyn. AE162 – Aerodynamics II AE160 – Aerodynamics I	AE114 – Aerostructures II AE112 – Aerostructures I	AE168 – Dyn. & Control AE165 – Flight Mechanics AE157 – Control Sys. Des AE140 – Rigid Body Dyn. AE138 – Vector Dyn.	EE98 - Circuits
Engineering Fundamentals (10 units): Engr10 (Intro. to Engr.), AE20 (CAD), AE30 (Programming), Engr100W (Engr. Reports)			
Science (17 units): Phys50 (Mechanics), Phys51 (Electricity & Magnetism), Phys52 (Waves, Heat & Light), Chem1A (General Chemistry)			
Mathematics (16 units): Math30 (Calculus I), Math31 (Calculus II), Math32 (Calculus III), Math 33A (ODEs), Math39A (Linear Algebra)			

MSAE Program – 76 students

Advanced Math / Numerical Methods (6 Units)	AE 200	Engineering Analysis of Aerospace Systems
	AE 269	CFD
MSAE Core (12 Units)	AE242 / AE243 / AE 245 / AE 246 / AE247	Astrodynamics / Aircraft D&C / Spacecraft D&C / Trajectories
	AE 250 / AE 251	Aerospace Structures & Materials
	AE 262 / AE 264 / AE 265 / AE 266	Aerodynamics / Hypersonics
	AE 267	Propulsion
Focus Area (6 Units)	AE 210 (GWAR)	Space Systems Engineering
	AE 271 (GWAR) / AE 273 (GWAR)	Aircraft Design
Thesis/Project (6 Units)	AE 295 A&B or AE 299	Project / Thesis
Areas in which students with non BSAE degrees must take prerequisite courses	Aerospace Structures	
	Aerodynamics	
	Flight Mechanics	
	Aerospace Propulsion	
	Aerospace Vehicle Dynamics & Control	

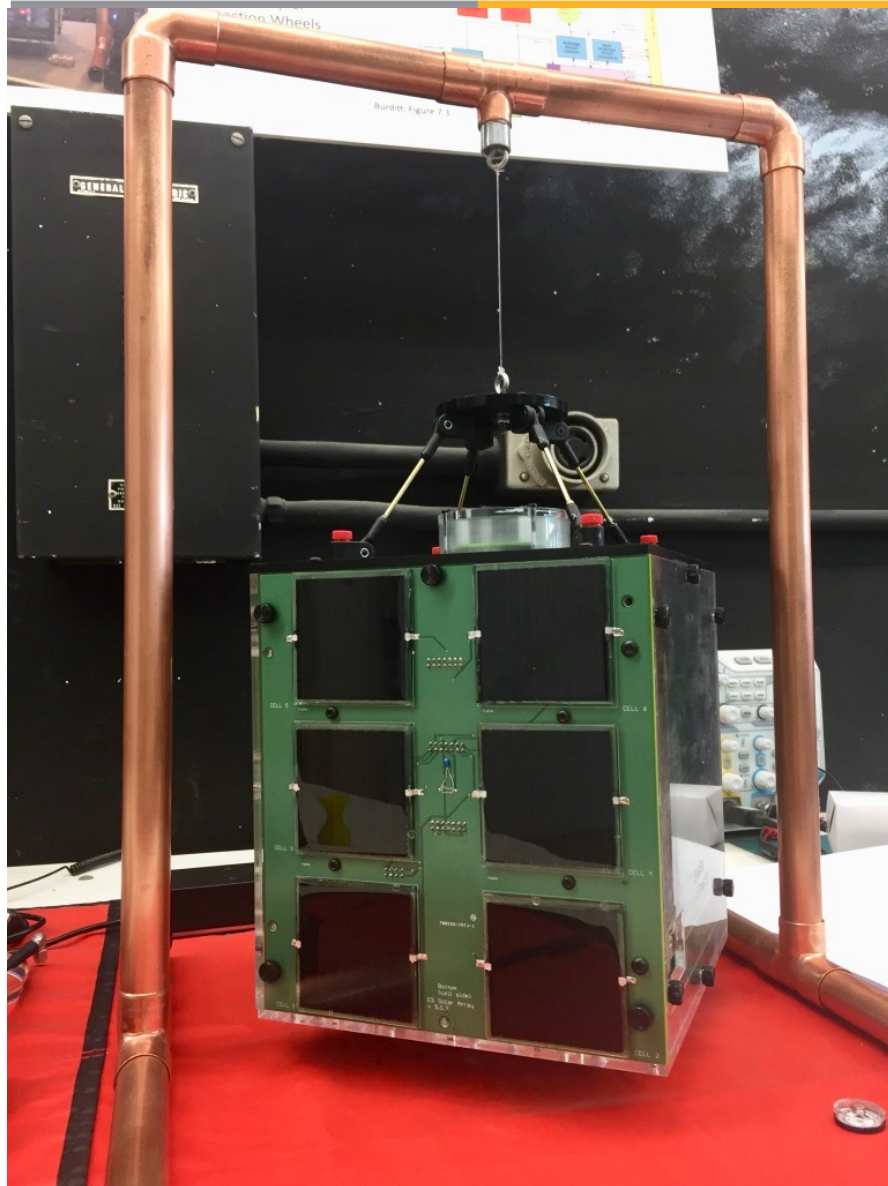
...coming *Fall 2022*

Spartan Accelerated Graduate Education

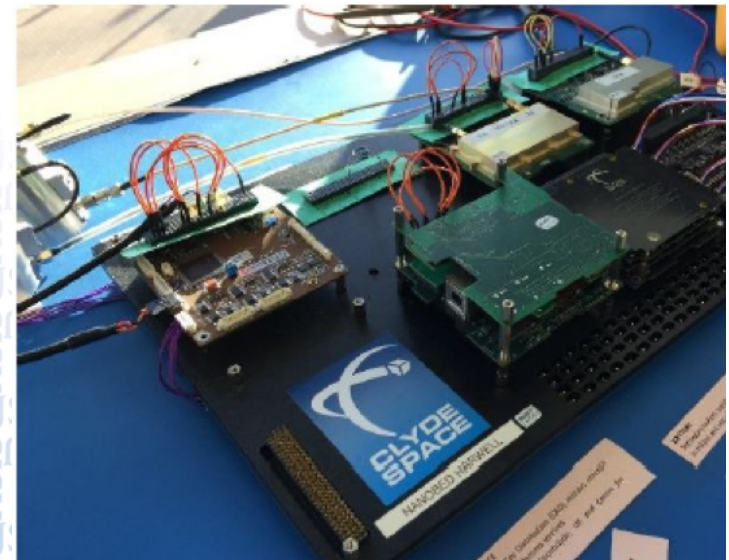
Apply:	Summer of Junior Year (95 units completed)
To qualify:	2.5 min GPA
	All Lower Division units completed
	Engr 100W completed
	B or better in AE112, AE114, AE138, AE140, AE157, AE160, AE162, AE165
5 Years	BSAE + MSAE degree completion

Space Systems Engineering Lab

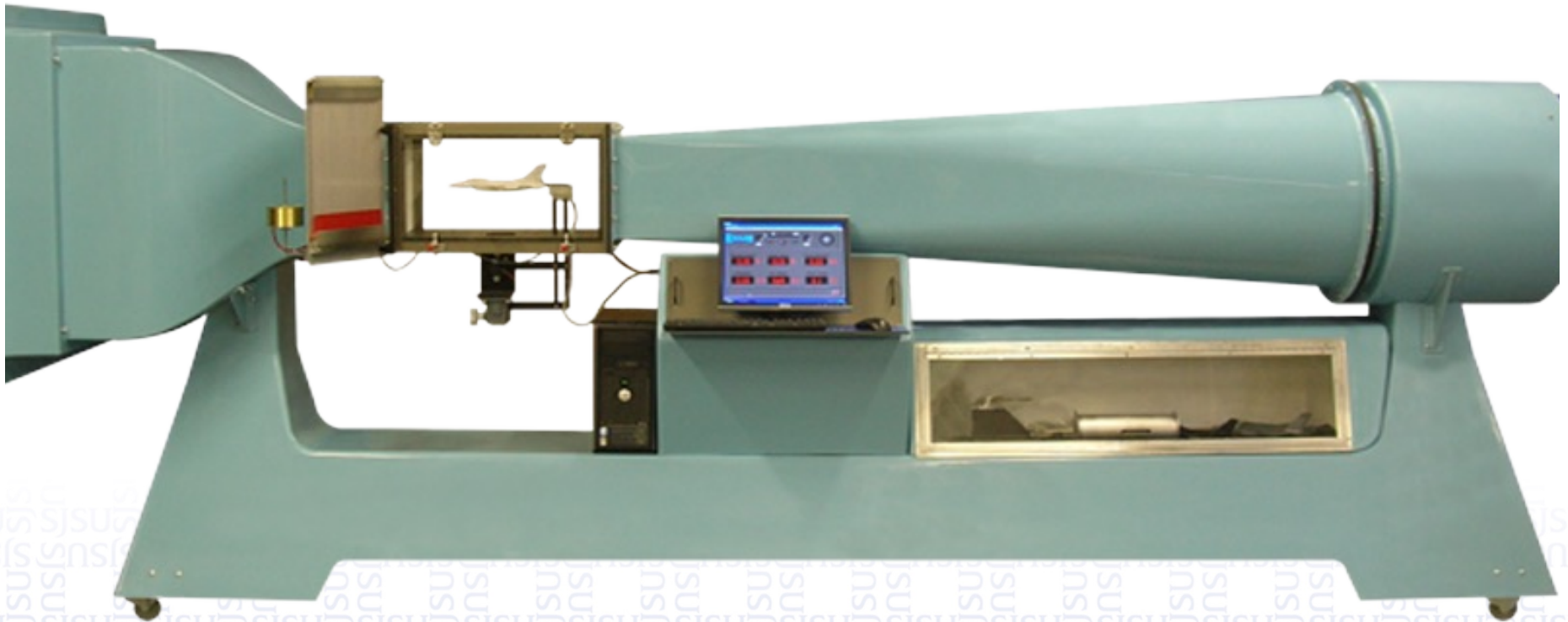
Lab to be **certified for
microsat manufacturing & testing**

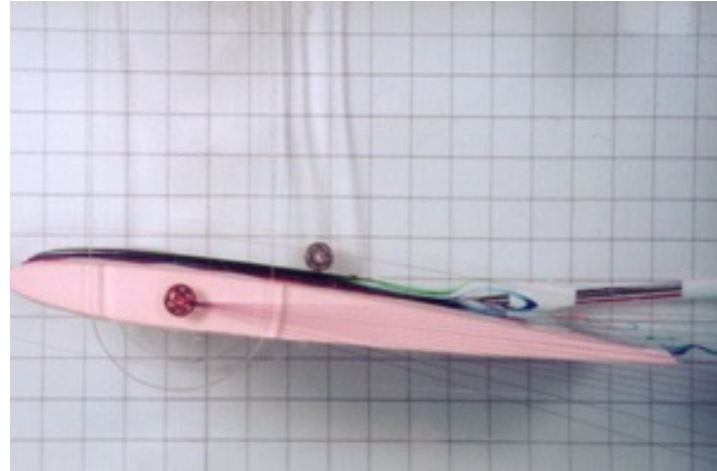
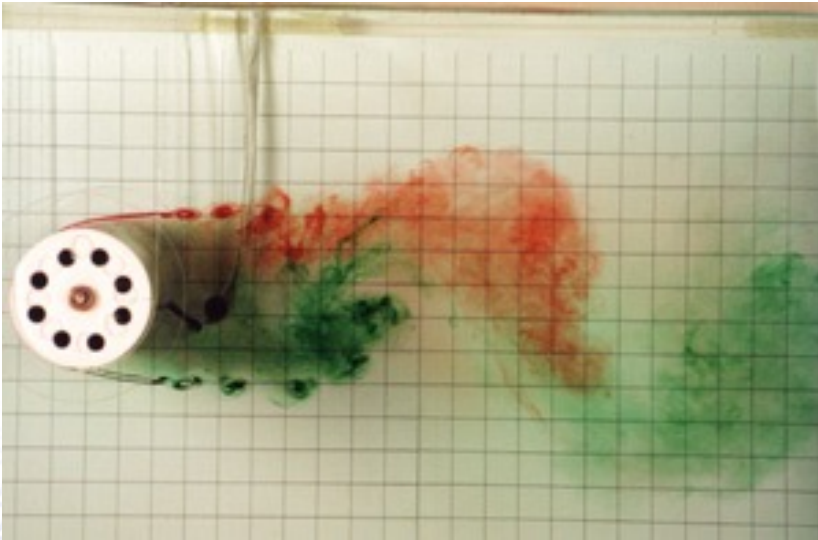


Nanobed









Designing a winner



AIAA's Design/Build/Fly contest gives college students a chance to pit their engineering smarts against international competitors in a remote-controlled aircraft flyoff. This year's event, the 20th annual competition, was arguably one of the most challenging. **Joe Stumpe** decloaks the winning design and explores the event's value to students.



Andy Ward/Flyer (San Jose State Univ.)

John Paul Gels-Cruz, above, holds down San Jose State University's practice aircraft to keep it from blowing away in high winds before the final flight of the competition. At right is pilot Tyler Sanders and sponsor Kunda Turban. Inset: Gels-Cruz and Sanders celebrate after the plane lands.



Rocketry

HARP Team after launch – November 2018



10 missions launched to ISS 2012 – 2022



3P-1

TechEdSat 13 launched 13 January 2022
on Virgin Orbit's LauncherOne vehicle
part of the STP-27VP mission

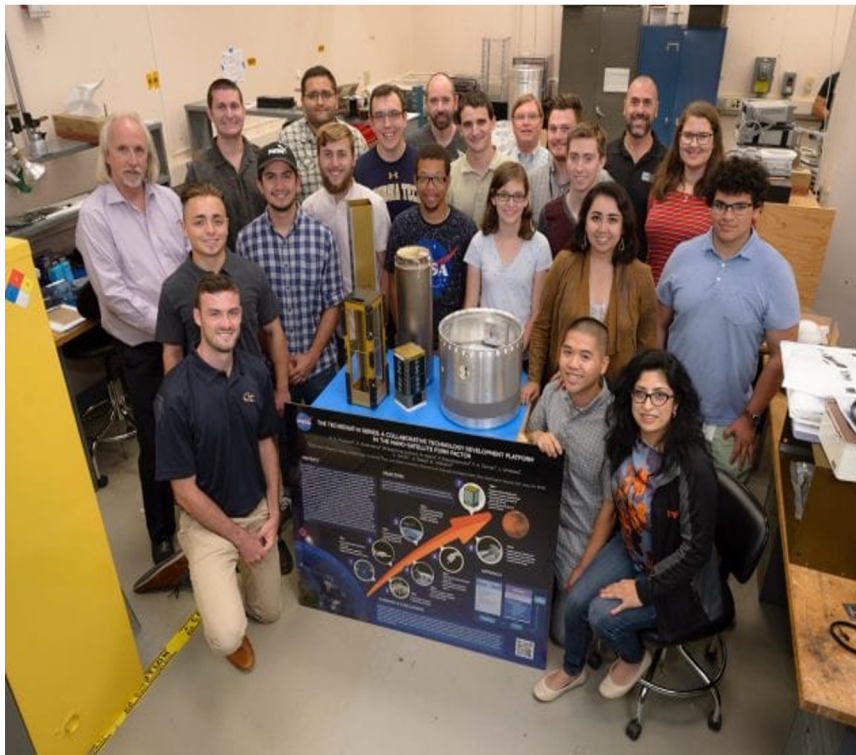
3P-2



San Jose City Council Commendation

February 26, 2019

TechEdSat Team, headed by Dr. Papadopoulos & Dr. Murbach (NASA Ames RC), received commendation for the launch of 8 Technology Education Satellites.



Alumni

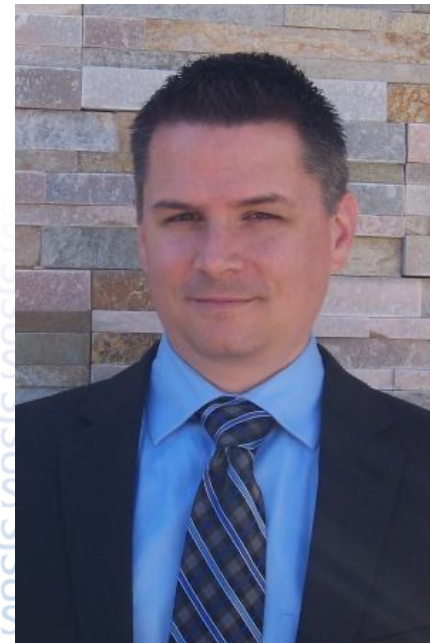
Gonzalo Mendoza
Director, Engineering & Innovation
- **Cessna**
BSAE 1998



Dr. Wade Huebsch
Professor, Aerospace Engineering
West Virginia University
BSAE 1992



Anima Patil-Sabale
NASA engineer & aspiring astronaut
MSAE 2010



Jay Westerwelle
Mission Operations Manager
Space Systems Loral
BSAE 2014

Alumni Comments

The size of the AE department makes it feel like a family. I spent years working alongside fellow students, who became good friends. Many of them found jobs in the AE industry within the Silicon Valley. Being at the heart of Silicon Valley, the Department sets students up for networking opportunities that will help them in the future. I got to know my professors fairly well. That directly shaped my success when one of them put me in contact with a past student, who was at an organization with open job positions.

Aaron Mazzulla BSAE (2012), MSAE (2015), PhD (2021) NASA Ames RC Systems Engineer

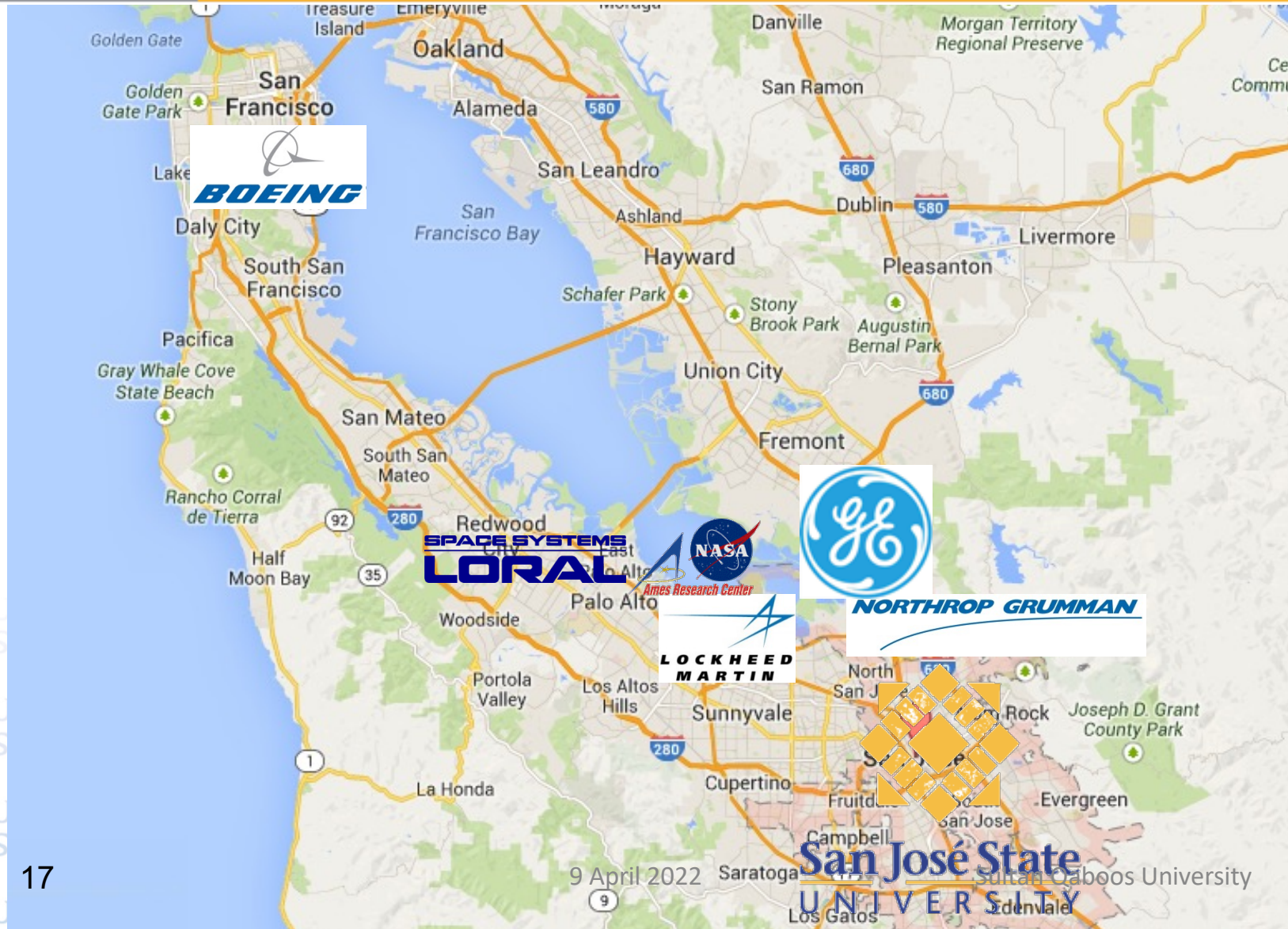
The deliberately open-ended real-world scenarios help build solid aerospace engineers who know how to find practical solutions to complex problems.

Tara Samuels MSAE (2017), Ph.D. Embry Riddle (2022), NASA Ames RC Engineer

The curriculum and teaching style in AE allowed me to approach new projects and solve problems differently than others I work with. I am better equipped to take initiative sooner than others, solve real problems by thinking outside the box, and appreciate success and failure in stride. Additionally, the program enhanced my team skills, allowing me to find more efficient ways of interacting with co-workers to accomplish my goals.

Jae Westerwelle BSAE (2014), SSL Mission Operations Manager

Aerospace Companies in the San Francisco Bay Area



AE Faculty

AE Tenure-Line Faculty

AE Adjunct Faculty



More information ?

Dr. Nikos J. Mourtos, Chair

Office: Engr. 272A

(408) 924-3867

nikos.mourtos@sjsu.edu

Website: www.sjsu.edu/ae/