

Cockpit Image of E-Quad from F-16 taken by USAF Maj. Cory Jerch MAE '04



Cory – MAE
Senior in 2004



Cory at Aviano Air Base, Italy in 2014





Two-stage rocket

Coleman Merchant

MAE Class of 2019



Video - Listen to countdown to
2nd stage separation



Coleman Merchant – May 28th
Spaceport Launch – New Mexico



before



after

Leading edge melted



before



after

Engineering

Structures

Machines

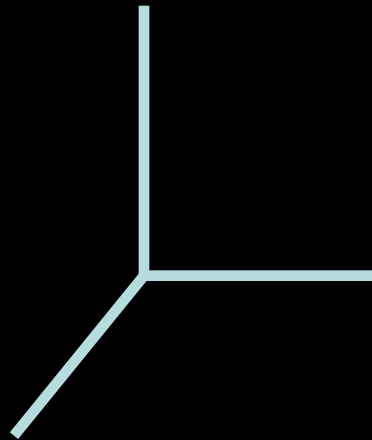
Networks

Processes

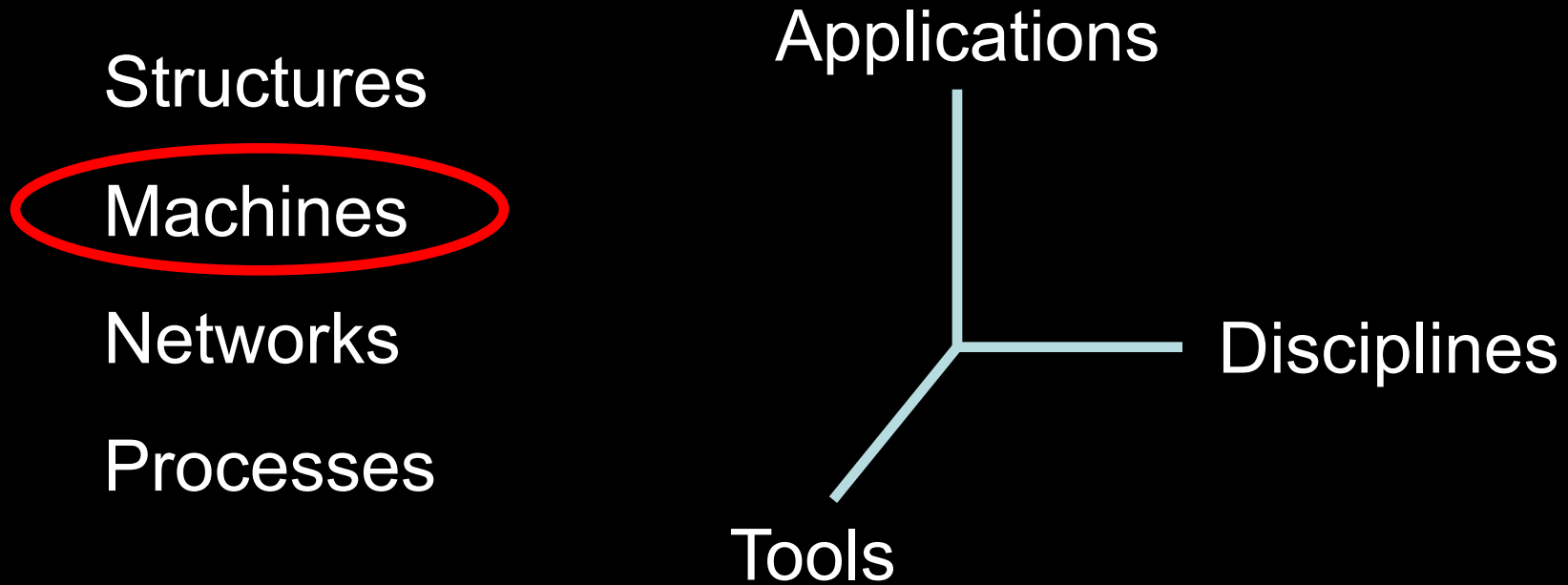
Applications

Disciplines

Tools



Mechanical and Aerospace Engineering



“If it moves, we own it”

Mechanical and Aerospace Engineering



- Energy
- Fluids
- Dynamics and Controls
- Aerospace
- Materials
- Applied Physics

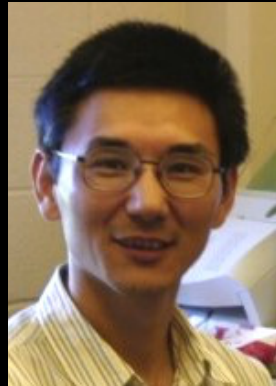
MAE 530 / 531

MAE 427
DGS

MAE 426
MAE 228

MAE 221
MAE 228

MAE 422



Combustion
fundamentals,
LAB

Turbulent
Combustion,
THEORY

Combustion
Plasmas,
LAB

Gas Turbines,
THEORY

Electricity –
Sector Eng.
POLICY

Energy Faculty

- Fundamentals of Combustion – swirling flames
- New materials formed in flames, Supersonic Combustion; Alternative Fuels
- Li-ion Battery Cathode Design; Electric Power Policy
- Sustainable Energy Certificate Program

MAE 305
MAE Chair



Microfluids LAB

MAE 502



Air / Water
interface, LAB

MAE 331
MAE 332
IW Coordinator



CFD Computer
Modeling THEORY;
Boeing Fellow

MAE 222
MAE 224



Turbulence,
Wind Turbine,
LAB

Fluids Faculty

- Turbulence and Boundary Layer Interactions
- Fundamentals of fluids – buoyancy, surface tension
- Design Optimization: Sailboats to Airplanes
- High Speed Wind Tunnel

MAE 433
Head, Rockefeller



Computer Modeling
and control of
Fluids, THEORY

MAE 434
CST, Director



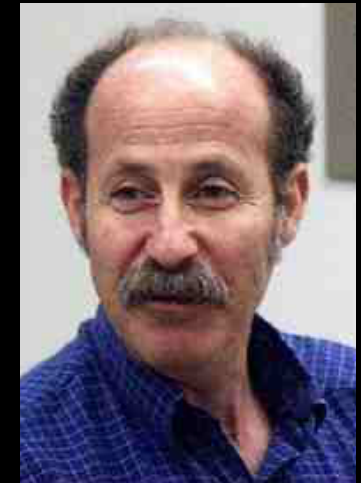
Computational
Biology; flocking,
LAB

MAE 206
MAE 345



Aerial Robotics in
complex
environments, LAB

MAE 412
CEE 102
DUS



Mechatronics,
Telescope and Laser
Design, LAB

D & C Faculty

- Underwater Robotics and Swarms
- Reduced Order Modeling
- Drones
- Robotics, Automation, and Optical System Control

MAE 206
MAE 345



Aerial Robotics in
complex
environments –
Drones, LAB

MAE 331
MAE 332
IW Coordinator



CFD Computer
Modeling,
THEORY

MAE 431
MAE 432



Electric propulsion,
MPD thrusters, 3D
acoustics, LAB

MAE 331
MAE 345



Stochastic Optimal
Control, THEORY

Aerospace Faculty

- Drones – Aerial Robotics
- Electric Propulsion; MPD Thrusters
- Computational Fluid Mechanics
- Apollo LEM Guidance and Navigation (Stengel)

MAE 344

MAE 306

MAE 324
Director, PRISM

MAE 223



Collective motion
of cells, wound
healing, LAB

Materials modeling,
biomaterials,
THEORY

Energy storage,
batteries, acoustic
lens, LAB

Topology and
Mechanics,
THEORY

Materials Faculty

- High Temperature and High Strength Materials
- Nano-scale and Bio-materials, Tissue engineering
- Laser Processing of Materials
- Crack and Fracture; Coatings and Thin Films

MAE 521
MAE 328



Femtosecond Lasers,
X-ray production, LAB

MAE 434



Control of
Plasmas LAB

MAE 322
MAE 423
MAE 226



Mechanical
Design;
Entrepreneur

MAE 309
MAE 353

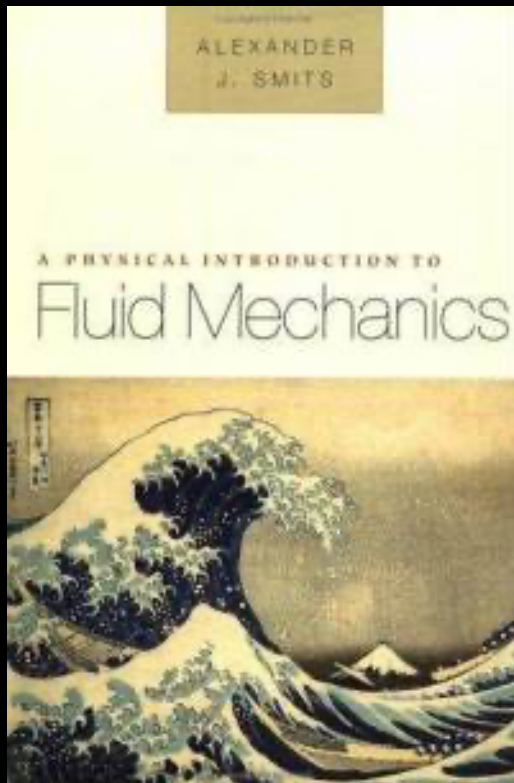


Nuclear Policy;
Global Security

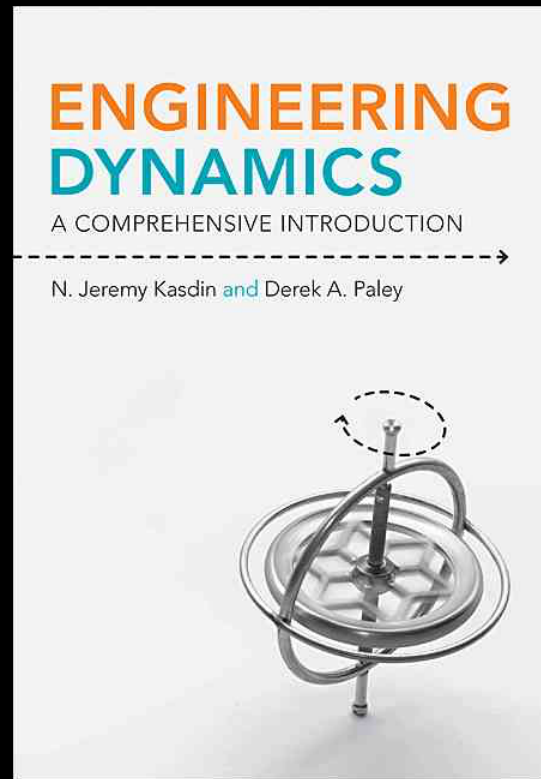
Applied Physics Faculty

- Compact X-Ray Light Source
- Plasma control
- Mechanical Design
- Nuclear Archeology

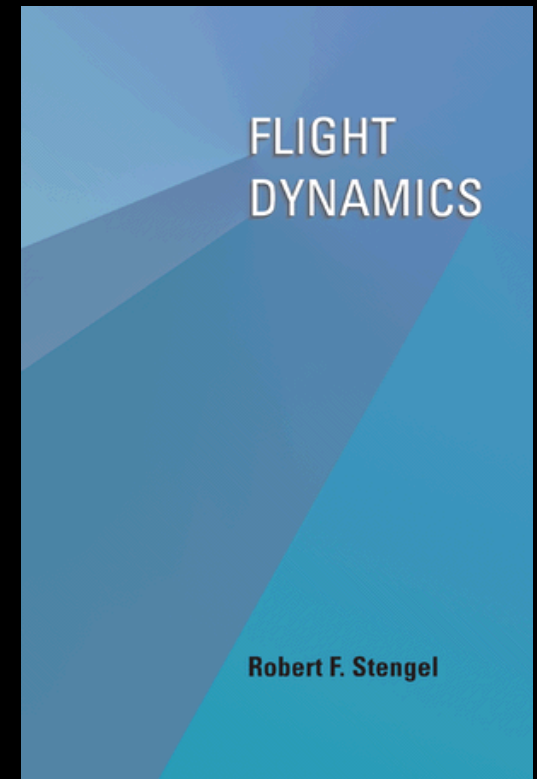
BOOKS by MAE Faculty



MAE 222



MAE 206



MAE 331



Students and Staff (Jo, Theresa, Jon, Glenn, Al, Mike)

Pyne Prize

Churchill Scholarships

Rhodes Scholars

NSF Fellows

Palmer Prize

Valedictorians

Boo Bicycles

Juiced Bikes

Dallas Stars (NHL)

Carolina Panthers (NFL)

USAF and Navy Pilots

VIDEOS

Some of our Graduates ...

Alexandra Techet – Mech Prof. MIT

John Dabiri – Aero and Mech Prof. Caltech

Nils Pierce – Applied Math and Bioengineering Prof. Caltech

Alison Marsden – Pediatrics and Bioengineering Prof. Stanford

Christopher Hart – former director NTSB

Lori Setton – Biomedical Prof. and Chair, Wash U.

Amy Lavers – Mech Prof. Univ of Illinois

Andrew Alleyne – Mech Prof. Univ of Illinois

Nick Frey – founder Boo Bicycles

Tora Harris – founder Juiced Bikes

Gordon Bitko – CIO FBI

Margaret Saroka, M.D. – Radiology

Amog Ram – Lead Software Engineer for SpaceX

Francis Arnold – Bioengineering Prof Caltech – Nobel Prize (Chem) 2018

Pete Conrad '62 – Navy Pilot and Astronaut (Gemini, Apollo 12, SkyLab)

Norm Augustine – former CEO of Lockheed-Martin

Patricia Falcone – Deputy Director Lawrence Livermore Lab

Paul Bondor, J.D. – Patent Attorney

Arron Melvin – Formula One Race Car Aerodynamicist

Cory Jerch – USAF Pilot

Seth DeValve – NFL Receiver