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

J223 – MAE Thermo/Fluids Lab
Leading edge melted
“If it moves, we own it”
Mechanical and Aerospace Engineering

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

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

MAE 305
MAE Chair

MAE 502

MAE 331
MAE 332
IW Coordinator

MAE 222
MAE 224

Microfluids LAB

Air / Water interface, LAB

CFD Computer Modeling THEORY; Boeing Fellow

Turbulence, Wind Turbine, LAB

NAE
• Underwater Robotics and Swarms
• Reduced Order Modeling
• Drones
• Robotics, Automation, and Optical System Control
**Aerospace Faculty**

- **Drones – Aerial Robotics**
- **Electric Propulsion; MPD Thrusters**
- **Computational Fluid Mechanics**
- **Apollo LEM Guidance and Navigation (Stengel)**
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 306
Director, PRISM

MAE 344
Collective motion of cells, wound healing, LAB

MAE 324
Materials modeling, biomaterials, THEORY

MAE 223
Energy storage, batteries, acoustic lens, LAB

Topology and Mechanics, THEORY
Applied Physics Faculty

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

Femtosecond Lasers, X-ray production, LAB
Control of Plasmas LAB
Mechanical Design; Entrepreneur
Nuclear Policy; Global Security

MAE 521
MAE 328

MAE 434

MAE 322
MAE 423
MAE 226

MAE 309
MAE 353
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
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 Laviers – 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