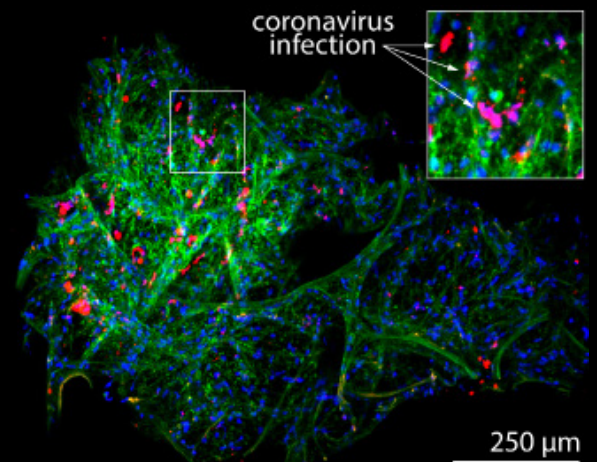
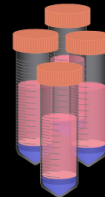
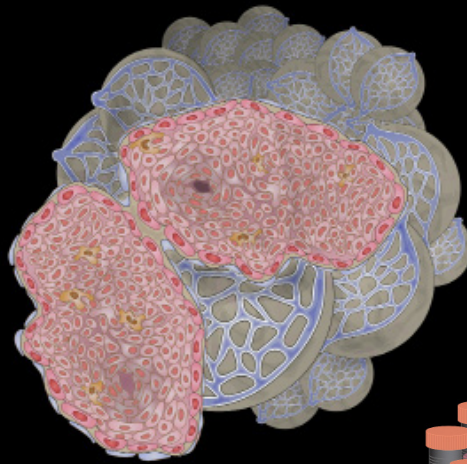


# Adapt. Pivot. Excel.

MAE's Cancer Engineering group, led by Dr. Greg Sawyer, has repurposed its cutting-edge capabilities for studying living tissues in culture to understand and fight SARS-CoV-2, the virus that causes COVID-19.



## COVID Successes

### Industry Insights with Gator Grads

How do you keep students, companies, alumni and faculty engaged when a pandemic keeps everyone at home? Create and deliver a YouTube series on industries and professional preparation!

### Making Lemonade from Lemons

In collaboration with MAE Senior Lauren Rogers and Ph.D. candidate Kim Stubbs, Drs. Sean Niemi and Matthew J. Traum had their paper, "Transitioning Oral and Poster Presentations Online in a Large Enrollment Capstone Design Course" accepted in *Advances in Engineering Education*, an ASEE journal. The paper's key finding was transition of Capstone final presentations online increased average evaluator panelist participation by over 50% with a peak increase of 100%. Given this positive outcome, Capstone final presentations will likely continue online to increase customer, sponsor, faculty, and alumni participation in future semesters.

## Grants & Contracts

### \$1.89M (DOE) Membrane-Based Ionic Liquid Absorption System for Ultra-Efficient Dehumidification And Heating

**Saeed Moghaddam:** This grant will help improve the efficiency, cost and sustainability of cooling and heating systems with a new thermodynamic cycle and non-crystallizing ionic liquids. Developed at UF, this new fuel-agnostic hybrid system can operate with renewable electric energy from solar or wind sources when available, and from natural gas otherwise.

### \$1M (AFOSR) Guidance Navigation and Control: Flight Laboratory Operation 2020

**David Jeffcoat:** The objective of this task is to continue development of the Autonomous Vehicles Lab at the UF REEF — specifically testing GNC capabilities developed by AFRL and university researchers.

# Awards

UF rises to the #6 public university in the nation and ranked 15 & 16 for Mechanical & Aerospace public graduate programs

U.S. News & World Report 2021

## Fellows

### Riccardo Bevilacqua

IAA Fellow

### Warren Dixon

IEEE CSS Distinguished Member Award

### Saeed Moghaddam

ASME Fellow

## Celebrating Successes

### International Hydrofoil Society

1st Place, Mandles Prize, Student Design Paper

### STEMtank 2020 Program

1st Place, AFC WACE Exemplary Practice Award

### Imagining the Future of UG STEM Education

Idea Competition Winner, National Academies

## Promotions

### Michael Griffis

Senior Lecturer

### Malisa Sarntinoranont

Professor

### Chelsey Simmons

Associate Professor and Tenure

### Douglas Spearot

Professor

## What's New

### New Faculty



**Ting Dong** (PhD, University of Florida) presently focuses on teaching Aerospace Design. As a graduate student, she taught Finite Element Analysis and Design, Mechanical Engineering Design 1, and Mechanics of Materials. Dong won the 3MT UF competition in 2017 and the Florida statewide competition in 2018. Before joining UF, she was a structural engineer of aircraft maintenance for China Southern Airlines. Her research interests are condition-based maintenance, prognostics and health management of aircraft structures.



**Dan Guralnik** (PhD, Technion IIT) is a Research Scientist with the Nonlinear Controls & Robotics (NCR) Lab. Initially trained as a pure mathematician in geometric group theory, he later moved into Robotics to study reactive navigation & control, hierarchical data structures, and their connections to artificial intelligence at the University of Pennsylvania (KodLab). His current research at NCR focuses on formal methods for hybrid controllers from a topological and category-theoretical viewpoint. He also works with the graduate students at NCR to expand their mathematical background, mentors undergraduate students in UF's Multicultural Program and is a founding member of the MAE Inclusion, Diversity, Equity and Access Committee.

### New Student Groups



## NSF Faculty Early Career Development Recipients



**Matthew Hale** is an assistant professor for MAE who works to develop novel data privacy techniques for control systems. With the NSF CAREER grant, Hale and his team will work to create new theoretical tools that allow users to understand the risks and rewards of granting access to privatized forms of their data. The goal is to develop an intuitive system for users to tune their data-sharing settings to find a comfortable balance of privacy and utility.



**Ryan Houim** is an assistant professor for MAE who models the dynamics of reactions using numerical simulation techniques. Houim's CAREER-winning proposal is focused on understanding dust explosions — the same explosions have plagued coal mines, food processing facilities and metal-working factories for centuries. More specifically, his project will study the effect that radiative heat transfer plays in igniting and propagating dust explosions using his cutting-edge numerical simulations.

## MAE by the Numbers

467

BS degrees awarded

22%

female graduates

138

MS degrees awarded

84%

federally funded awards

24

PhD degrees awarded

\$13.2M

research expenditures (ASEE: \$12.8M)