Dept. of Ocean Engineering and Marine Sciences

Rich Aronson
Head of Department
Who We Are 2020

• 102 Incoming Undergraduate Majors
  – 36 Marine Biology (35%)
  – 24 Ocean Engineering (24%)
  – 12 Meteorology (12%)
  – 8 Environmental Science (8%)
  – 8 Oceanography (8%)
  – 7 General Biology (7%)
  – 7 Sustainability, Marine Cons., Fish/Aqua (7%)

All-years total: 332 majors, 46 minors

• ~71 Graduate Students
Teaching: Physical Oceanography & Environmental Sciences, Earth Remote Sensing

MARK BUSH
Community Ecology and Paleoecology
SPENCER FIRE

EFFECTS OF HARMFUL ALGAL BLOOMS ON MARINE WILDLIFE
Eutrophication: Nutrient sources, cycling and sinks
Inorganic Contaminants
Kelli Hunsucker, Assistant Professor of Oceanography

Research Interests
Biofouling
Dynamics of marine biofilms
Benthic ecology
Coastal water quality
Eco-engineering
Marine materials
Manmade impacts on ecosystems
Marine outreach & education

Courses
Introduction to Oceanography
Biological Oceanography
Ocean Biology for Engineers
Kevin B. Johnson
Biological Oceanography and Environmental Science

Plankton Ecology
Harmful Algal Blooms
Invasive Species
Benthic Restoration
Seagrass Ecology
Larval Recruitment
Implementing “Adaptation Action Area” Policies in Florida

A Supplemental Project of Special Merit to the Statewide Community Resiliency Initiative

The 2013 Florida Legislature passed the Community Planning Act (CPA) making significant changes to the state’s growth management laws, including the addition of optional adaptation planning for coastal hazards and the potential impacts of sea level rise. The Adaptation Action Area, as defined in the CPA, is an optional comprehensive plan designation for areas that experience coastal flooding and that are vulnerable to the impacts of climate change and sea level rise. These areas shall be considered for infrastructure and adaptation planning. Local governments are encouraged to consider policies within the coastal management element that address coastal flooding. Criteria for the adaptation action area may include areas which have a hydrological connection to coastal flooding or an increased risk of coastal flooding due to sea level rise. This five-year initiative will examine the existing policies in Florida’s Comprehensive Coastal Management Program (CCMP) and determine how to best integrate sea level rise considerations into the planning process.
GLENN MILLER
Instructor
Modeling and Quantitative Biology
Coastal Ecology
Andrew Palmer

CHEMICAL ECOLOGY AND PLANT BIOLOGY
Pallav Ray: Meteorology
Tropical Climate Dynamics
Intraseasonal Oscillation
Regional Climate Modeling
Surface Energy Budgets
Urban Climate
Emily Ralston

Biological invasions, invertebrate settlement and recruitment, biomimicry, field testing, ecology and biology of fouling communities
Hydrodynamics of side-by-side Offloading Operation

Wake field behind a highly skewed propeller

Propeller Cavitation through CFD

Power comparison

Effective Power $P_e$

Velocity (knots)

Power comparison

TSHT open Power (kW)

Axial Turbine for Energy Producing Device

Ventur effect turbine

Naval Architecture
Geoff Swain
Ocean Engineering
Materials, Corrosion, Biofouling
Ships, Boats, Oil and Gas, Renewables, Subsea, Ports and Harbors, Aquaculture
9-DAY OLD RED DRUM LARVA

TIME (msec)

0 20 40 60 80 100 120 140

EXCURSION (mm)

0.0 0.1 0.2 0.3 0.4 0.5

HYOID

GAPE

RALPH TURINGAN
FISH BIOMECHANICS AND EVOLUTION
Robert J. Weaver
Associate Professor of Ocean Engineering

Real-Time Forecasting of Waves & Storm Surge

MODELING IRL
Flushing:

REAL TIME FLORIDA
COASTAL GUIDANCE

Living Shorelines/Living Docks:

Outreach & Education:

Muck removal:

Outreach & Education:
Stephen Wood – Professional Engineer
Professor of Ocean Engineering

- Autonomous Underwater Vehicles
- Remotely Operated Vehicles
- Ocean Energy
- Underwater Technologies
Gary A. Zarillo, Ph.D., PG
Professor of Oceanography

Coastal and Estuarine Processes
Coastal Sedimentary Environments
Coastal Zone Management

Estuarine Dynamics and Water Quality Models

Shallow Marine Sediment Resources

Coastal Engineering Modeling

Lido Ostia: Italian Coast
Coastal Engineering Model Setup
Climate Change
Coral Reefs
Polar Ecology
Evinrude Marine Operations Center
Florida Tech Aqualab
MICROSCOPY FACILITY
Diving at Florida Tech:
SCUBA Club
AAUS

AAUS Program
Requires Advanced Scuba Cert.

Contacts:
Tim Fletcher, DSO
Dr. Jon Shenker, this Department
Industrial Internships
Ocean Engineering, Oceanography
Environmental Science

• Faculty have excellent contacts with local industry.

• Students should chat with advisor.

• Receive course credits!
Many students have internships and part-time jobs at local tech companies:

- Northrup Grumman (ME, AE, EE, OE)
- Harris Corp (ME, AE, EE, OE)
- Rockwell Collins (ME, AE, EE, OE)
- Larsen Motorsports (ME, OE)
- Structural Composites (OE)
  - President is OE Alum
- Matrix Composites (ME, OE)
  - President is OE Alum
YOUR RIGHTS

• A world-class education in a nurturing environment.
• Fair, unbiased treatment.
• Access to your faculty advisor and your committee.
• Instruction and facilities to complete your degree in a timely fashion.
• Career advice from your advisor and your graduate committee.
YOUR RESPONSIBILITIES

• Academic excellence.
• Management of your schedule.
• Accessing your faculty advisor.
• Timely and satisfactory completion of your assignments.
• Attendance at seminars: Wednesdays at 4:00 PM.
• Familiarity and compliance with the Graduate Handbook.
Filing Your Paperwork

• University forms are originated with the Student Coordinators’ Office, under the direction of Mark Archambault, the Assistant Dean of CoES. Contact Jennifer Nessmith (jnesssmith@fit.edu) to file your forms.

• The exceptions are our departmental forms, which go to Dee Dee Van Horn (dvanhorn@fit.edu):
  – Formation of graduate committee
  – Forms 1–5 in the Graduate Handbook, which you will receive soon.
YOUR RESPONSIBILITIES

• Academic excellence.
• Management of your schedule.
• Accessing your faculty advisor.
• Timely and satisfactory completion of your assignments.
• Attendance at seminars: Wednesdays at 4:00 PM.
• Familiarity and compliance with the Graduate Handbook.
• Academic honesty and personal integrity.
PLAGIARISM

Copying the work of others and presenting it as one’s own. Plagiarism includes *but is not limited to*:

- Copying text verbatim from other publications without quotation marks or attribution.
- Copying text from other publications and changing a few words without attribution.
- Copying images without attribution.
- Repeating another person’s concepts or ideas in a paper without proper attribution.
- Submitting papers purchased from websites or other sources.
- Copying anything from fellow students in written exams or papers (AKA cheating).

More information is available on the Florida Tech website: [www.fit.edu/current/documents/plagiarism.pdf](http://www.fit.edu/current/documents/plagiarism.pdf)

The penalties for plagiarism are severe! When in doubt, consult your instructor!
SOME ADVICE

• Work hard.
• Manage your time wisely.
• Be proactive about your education.
• Sign up for the OEMS student listserv (see next slide).
• PLUS: Check your Florida Tech email account every day. We will not send email to another account.
Departmental Listservs

• Everyone should subscribe to the main listserv: oems@lists.fit.edu

• Subscribe to more specific listservs as appropriate.
### Departmental Listervs

<table>
<thead>
<tr>
<th>Email Address</th>
<th>Description</th>
<th>Subscription Details</th>
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| oems@lists.fit.edu     | ALL OEMS programs (the list for department wide posts, e.g. picnic). To subscribe send email: | to: sympa@lists.fit.edu  
  subject: subscribe oems firstname lastname |
| marsci@lists.fit.edu   | Marine and Conservation Bio, Ecology, Aquaculture. To subscribe send email to: | to: sympa@lists.fit.edu  
  subject: subscribe marsci firstname lastname |
| oes@lists.fit.edu      | Meteorology, Oceanography, Enviro Sci, Ocean Engineering. To subscribe send email (no subject): | to: oes-subscribe@lists.fit.edu |
| fitscams@lists.fit.edu | Meteorology only. To subscribe send email (no subject): | to: fitscams-subscribe@lists.fit.edu |

Lists owner: Dr. Lazarus
Social Media

https://www.facebook.com/pg/FLTechOEMS/about/

https://www.instagram.com/oems_floridatech/?hl=en

https://twitter.com/ocean_florida
Welcome to the Family!

Rich Aronson
Head of Department