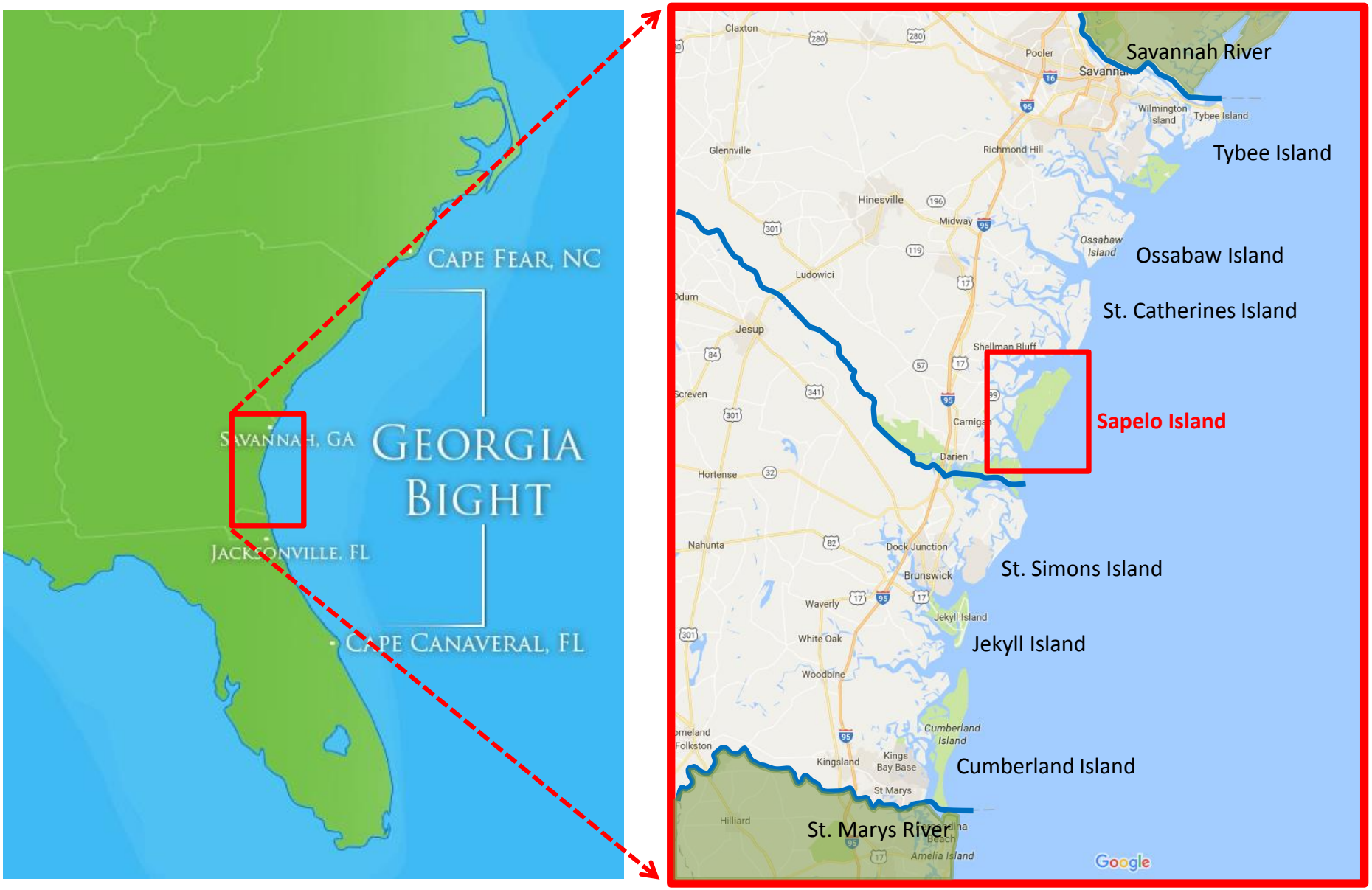
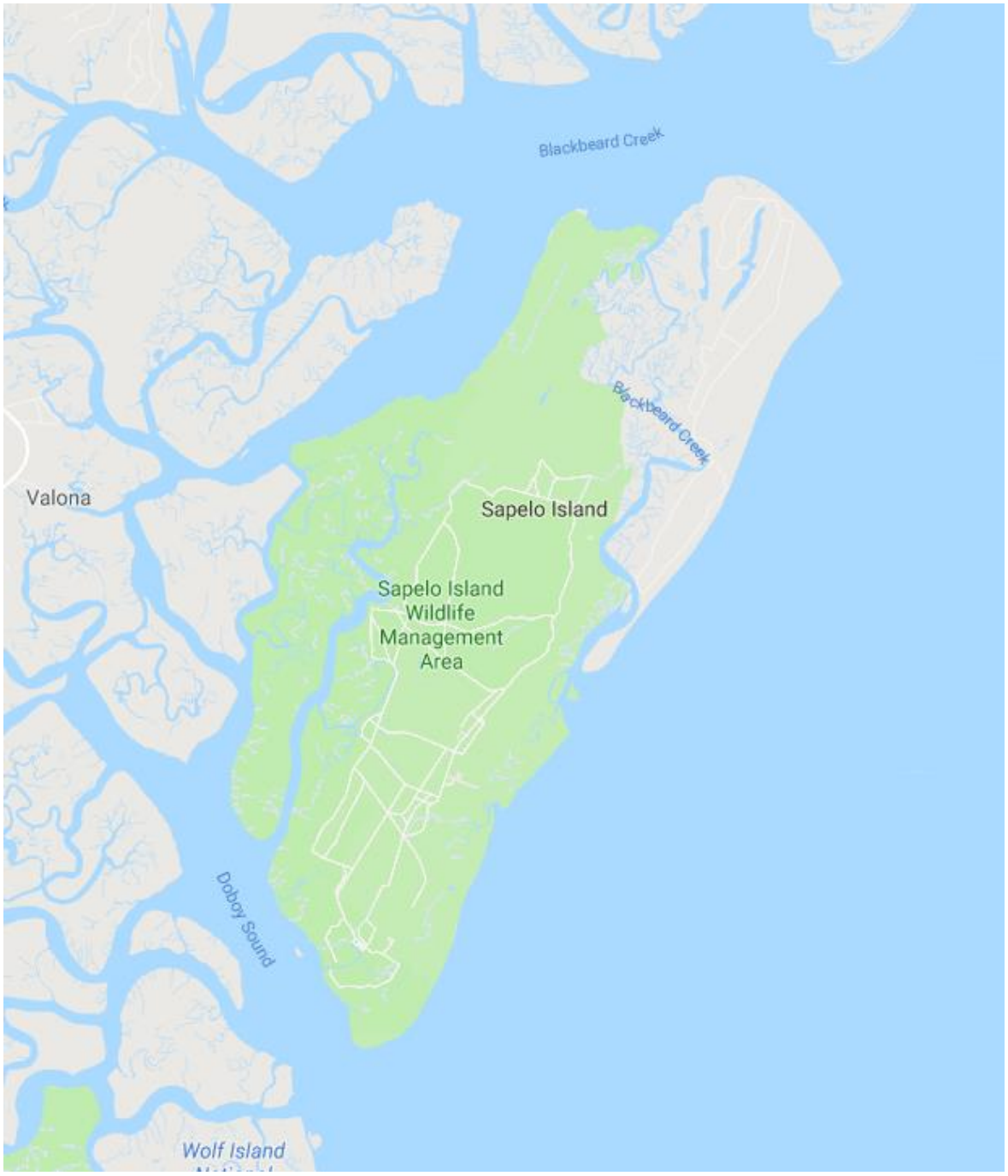
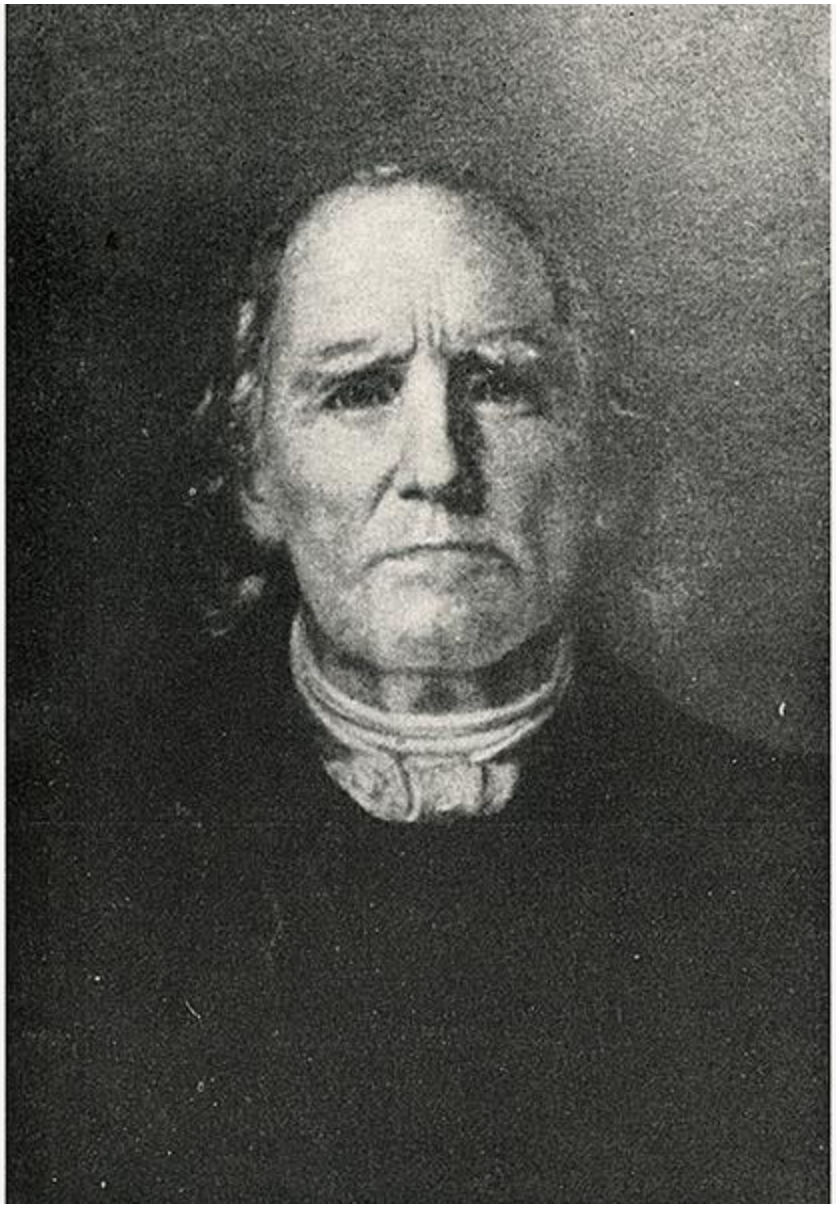
Sapelo Island: Strategic Planning, Disaster Recovery, & Resiliency for Historic Facilities

Scott Messer	Director of Historic Preservation UGA Office of University Architects
Merryl Alber	Professor & Director UGA Marine Institute
Carl Bergmann	Associate VP for Research-Facilities UGA Office of Research
Jacob Shalack	Assistant Director for Operations UGA Marine Institute


CAPE FEAR, NC
SAVANNAH, GA
GEORGIA BIGHT
JACKSONVILLE, FL
CAPE CANAVERAL, FL
Savannah River
Tybee Island
Ossabaw Island
St. Catherines Island
Sapelo Island
St. Simons Island
Jekyll Island
Cumberland Island
St. Marys River
Claxton
Pooler
Savannah
Wilmington Island
Tybee Island
Glennville
Richmond Hill
Hinesville
Midway
Ossabaw Island
Ludowici
Jesup
Shellman Bluff
Screven
Carnigan
Darien
Hortense
Nahunta
Dock Junction
Brunswick
Waverly
Jekyll Island
White Oak
Woodbine
Cumberland Island
Folkston
Kingsland
Kings Bay Base
St Marys
Hilliard
Amelia Island
Google


Blackbeard Creek
Blackbeard Creek
Valona
Sapelo Island
Sapelo Island Wildlife Management Area
Dobay Sound
Wolf Island



Thomas Spalding (1774 -1851)

Howard Earle Coffin

FOR SALE

"SAPELEO" (*quite near the famous Jekyl Island Club*)

ONE OF THE LARGEST, most historical, picturesque, and valuable island properties on the South Atlantic Coast, containing between eighteen and twenty thousand acres; about three thousand acres cleared for cultivation, thirty miles of wire fencing, etc. The improvements consist of a very attractive partially remodeled old Colonial Mansion, with modern conveniences; also superintendent's residence, numerous houses for servants, farm and other labor; modern and attractive barns, corrals, etc. Included with the property are various kinds of livestock, such as, riding horses, work horses, mules, jacks, a large number of Hereford cattle, hogs, various kinds of fowls, all necessary farming implements, including tractors and long staple cotton ginnery; also boats, and derricks, saw mill and planing mill, etc., for the exclusive use and upkeep of the property. This estate has a magnificent five mile ocean beach frontage, with two large sounds on either end and a beautiful and bold salt water river on the inland side, which furnishes wonderful fishing, oysters, yacht anchorage, etc. The property also possesses excellent QUAIL, DUCK, WILD TURKEY AND DEER shooting. The numerous driveways and homesites thereon are indeed picturesque, making it an ideal individual or club proposition. Unlike other country estates and game preserves, this property ("a little Continent"), is a money maker, and is about all that anyone could wish in such an estate. Located on the Georgia Coast, between Savannah and Brunswick, Ga., with excellent telephone connections. The present owner, a large Northern Automobile Manufacturer, has owned and enjoyed the wonderful privileges of this property, for the past nine to ten years. Full description, price and liberal terms, upon application.

"Green Pointe Plantation and Duck Preserve"

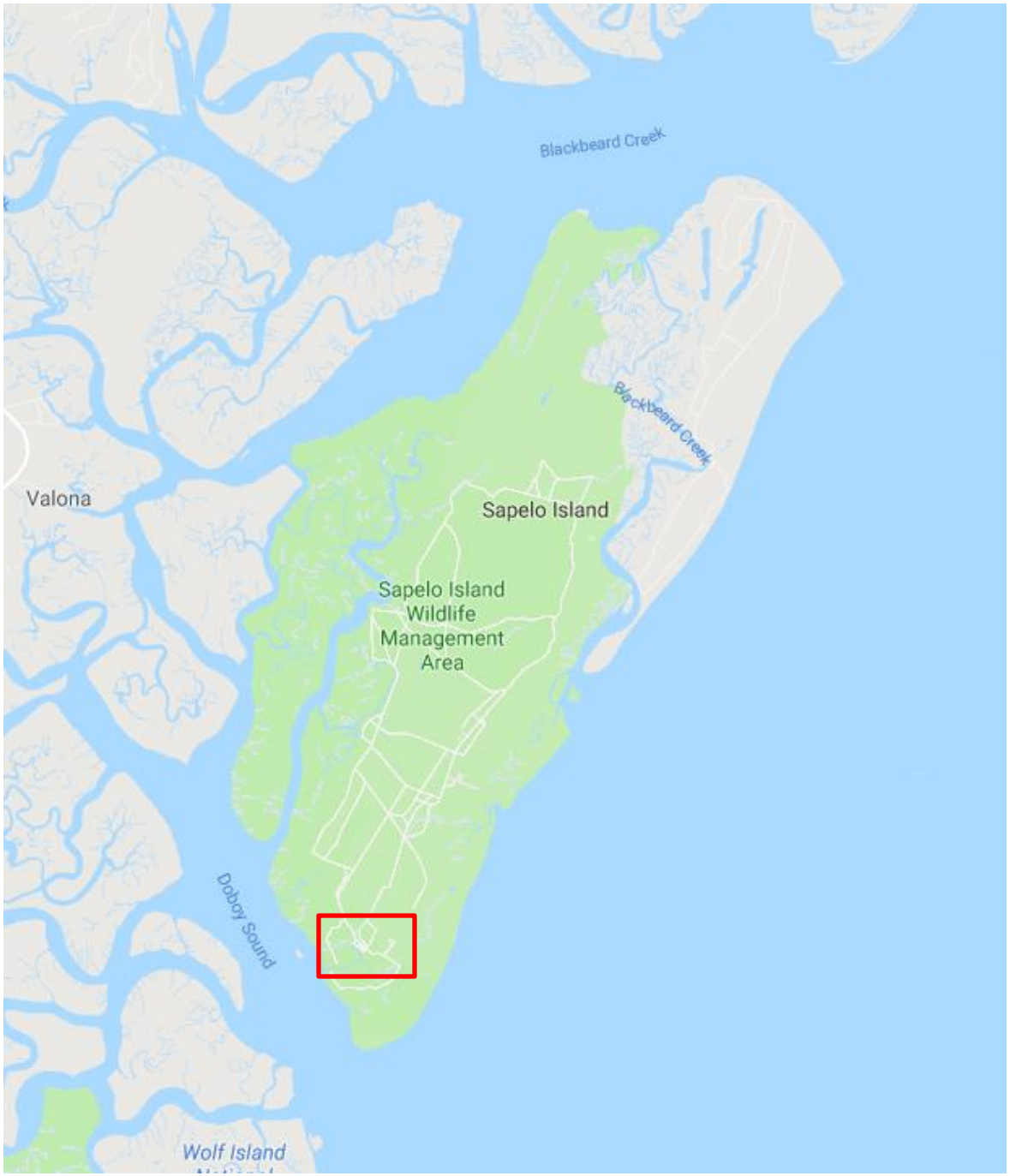
ON THE SOUTH CAROLINA COAST, the greatest duck grounds in the South, consisting of twenty-two hundred (2200) acres of picturesque fertile land. Improvements consist of a very attractive, completely furnished nine room residence with all modern conveniences. Located on bluff overlooking the beautiful Combahee River, which affords excellent yacht and other craft anchorage, good fishing, etc., the year round. Also servant houses, barns, all necessary modern farming implements, livestock, etc. As a whole it is one of the most attractive and best equipped plantations and game preserves for its size in the South. Located about eight miles from the ocean, between Charleston, S. C., and Savannah, Ga., very convenient to the main lines of the A. C. L. & S. A. L. Rys., North and South.

Also have for sale other attractive Southern Plantations, Game Preserves and Country Estates, many with beautiful salt water frontages; full descriptions, prices and terms upon request

L. H. SMITH — **401 Mendel Building, Savannah, Georgia**

Advertisement for the sale of Sapelo, 1933.

Richard Joshua Reynolds, Jr. in 1946


Blackbeard Creek
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Sapelo Island Wildlife Management Area
Dobay Sound
Wolf Island


Magnolia Cir
Autobahn
Shell Hammock Rd
Shell Hammock Rd
Autobahn
Shell Hammock Rd
Autobahn
Pond Circle Rd
Marine
Institute-University of Ga
Sapelo Island and
Reynolds Mansion
Shell Hammock Rd
Beach Rd
Google
Wolf Island


Magnolia Cir
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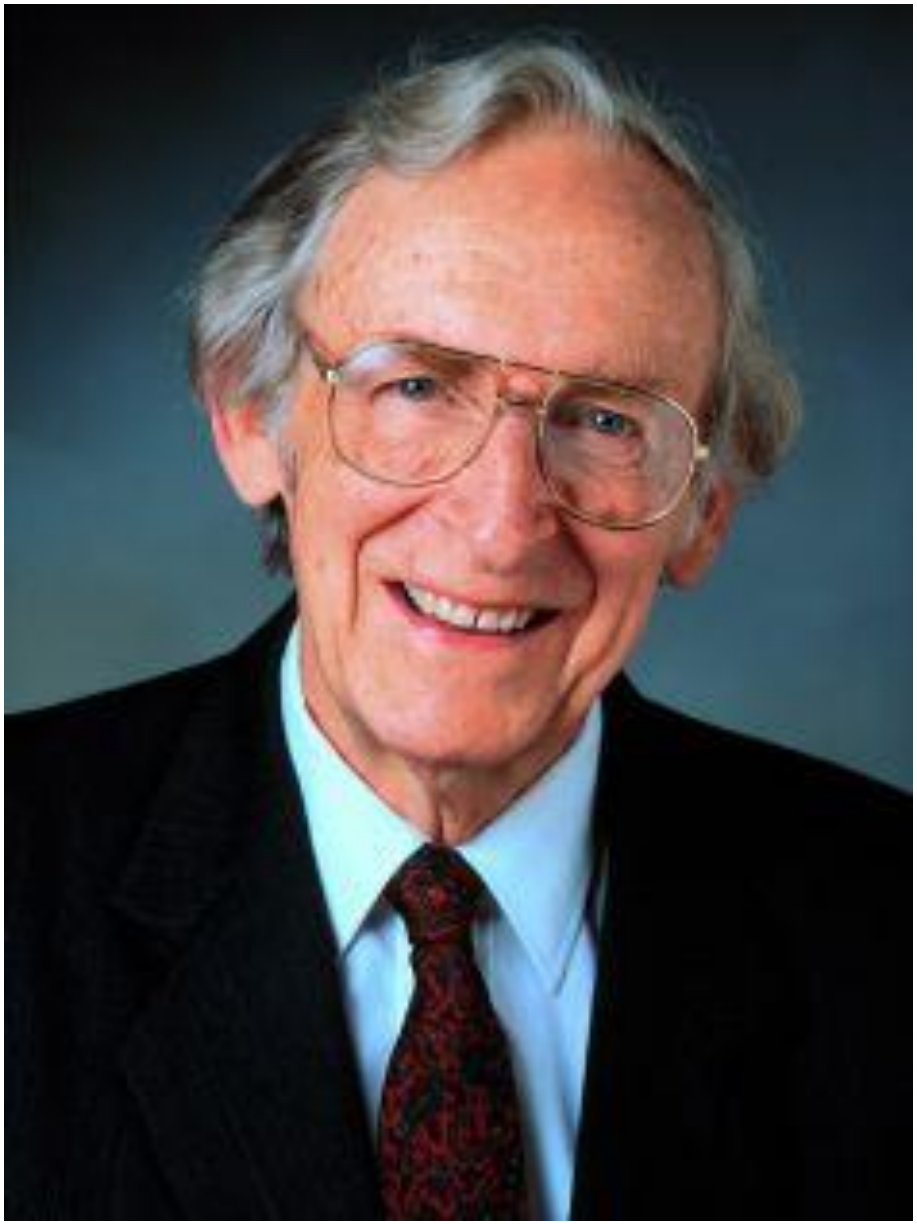
Reynolds Mansion
Beach Rd
3D
Google



Eugene Pleasants Odum

1953

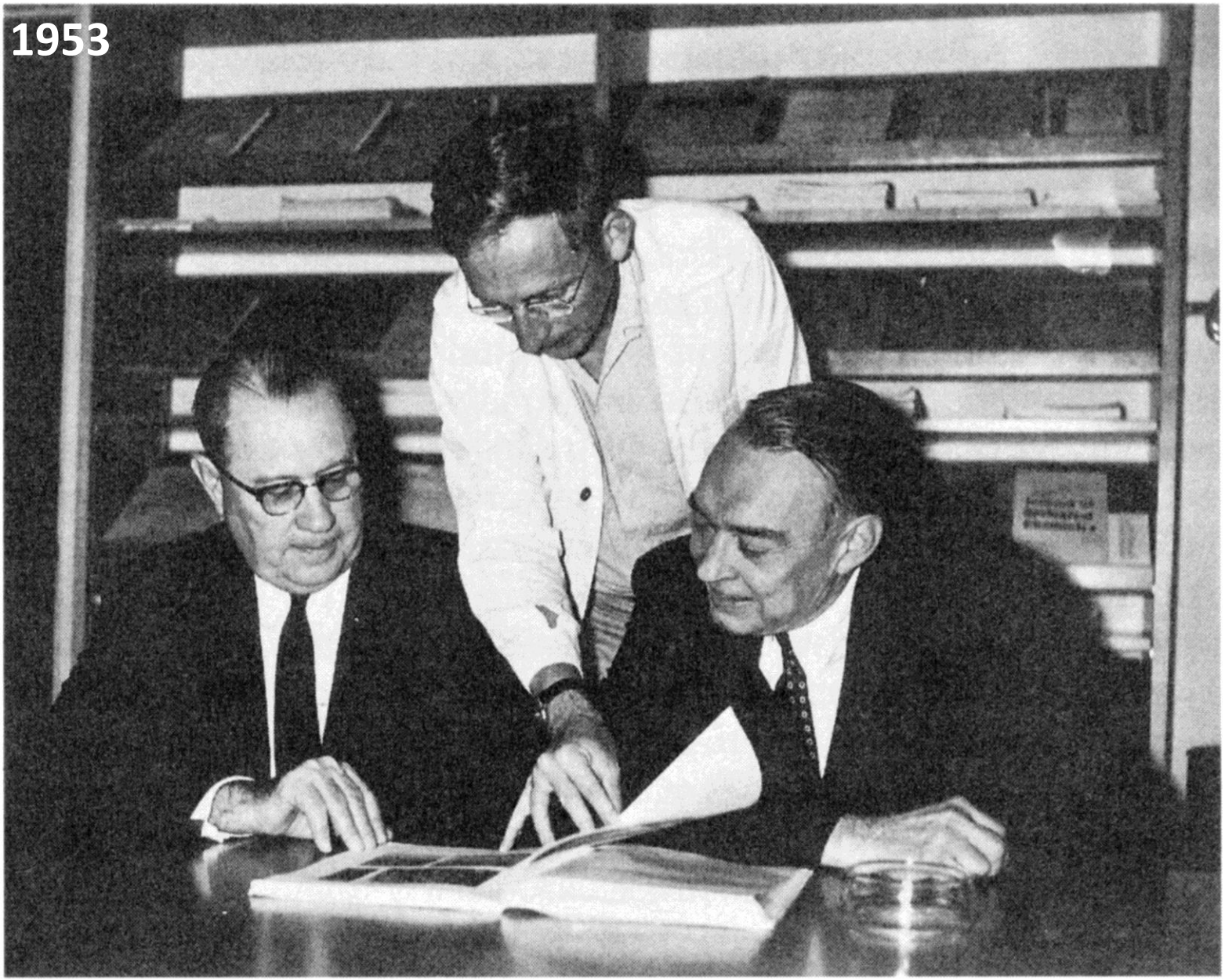


Figure 7-4. Left to right: President O. C. Aderhol, Eugene P. Odum, and Richard J. Reynolds, Jr. in the Marine Institute Library.

UGA Marine Institute founded, 1953

Figure 7-3. John M. Teal preparing experimental enclosures in the South End Marsh, 1955. The boardwalk that Glasco Bailey and he constructed provided regular access without trampling the marsh.

1958: 1st international salt marsh conference

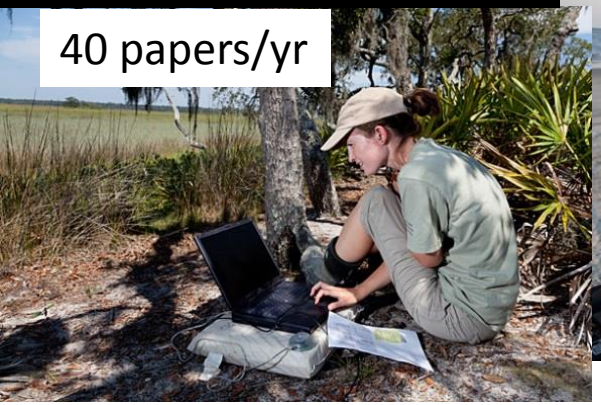
CONFERENCE ATTENDANTS

1. Hugh M. Raup; 2. V. J. Chapman; 3. E. O. Mellinger; 4. Paul Burkholder; 5. R. R. Rudolf; 6. Meyer Rubin; 7. Carl Oppenheimer; 8. Charles E. Jenner; 9. John M. Teal; 10. Lawrence R. Pomeroy; 11. Walter Hantzschel; 12. John Zeigler; 13. Alfred C. Redfield; 14. J. L. Chamberlain; 15. Alfred E. Smalley; 16. W. K. Schuckmann; 17. Robert A. Ragotzkie; 18. Robert E. Stevenson; 19. F. Ronald Hayes; 20. Richard J. Russell; 21. Lawrence Wineland; 22. Victor W. Kay; 23. George H. Boyd; 24. Phil Van Dyck; 25. R. Barclay McGhee; 26. Kenneth Wagner; 27. Edwin T. Moul; 28. Evelyn L. Pruitt; 29. Edward Kuenzler; 30. Elso S. Barghoorn; 31. Herbert Kale; 32. Helen B. Fink; 33. J. A. Steers; 34. Jay Andrews; 35. H. T. Odum; 36. Cedric Titler; 37. George Sprugel; 38. J. L. McHugh; 39. William W. Anderson; 40. William Burbanck; 41. James P. Morgan; 42. William J. Payne; 43. W. H. Bradley; 44. Bruce Willis; 45. Wilhelm Shafer; 46. J. R. Valletine; 47. John Chronic; 48. Frederick Johnson.

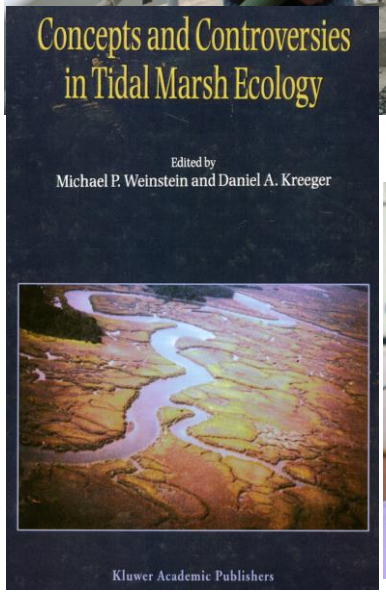
UGAMI provides exceptional opportunities for research and education in coastal ecosystems

Research at UGAMI

40 papers/yr



GCE-LTER
Flux Tower



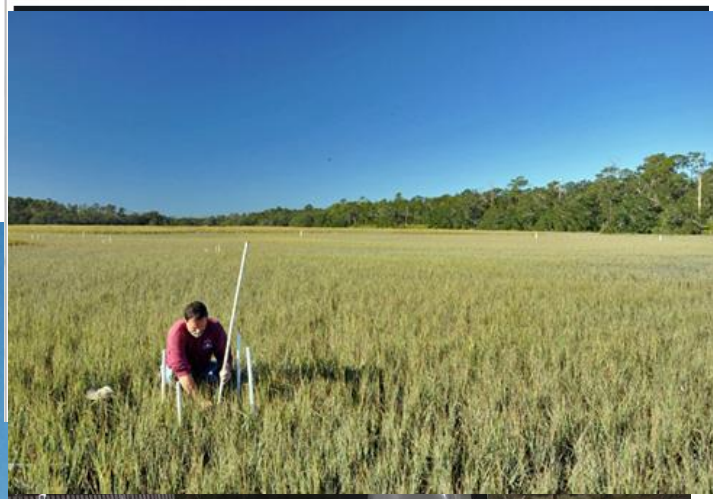
PBS NEWSHOUR

TOPICS › SCIENCE

Take a look inside a sea level rise time machine

BY NSIKAN AKPAN *September 18, 2015 at 5:55 PM EST*

2213 EMAIL



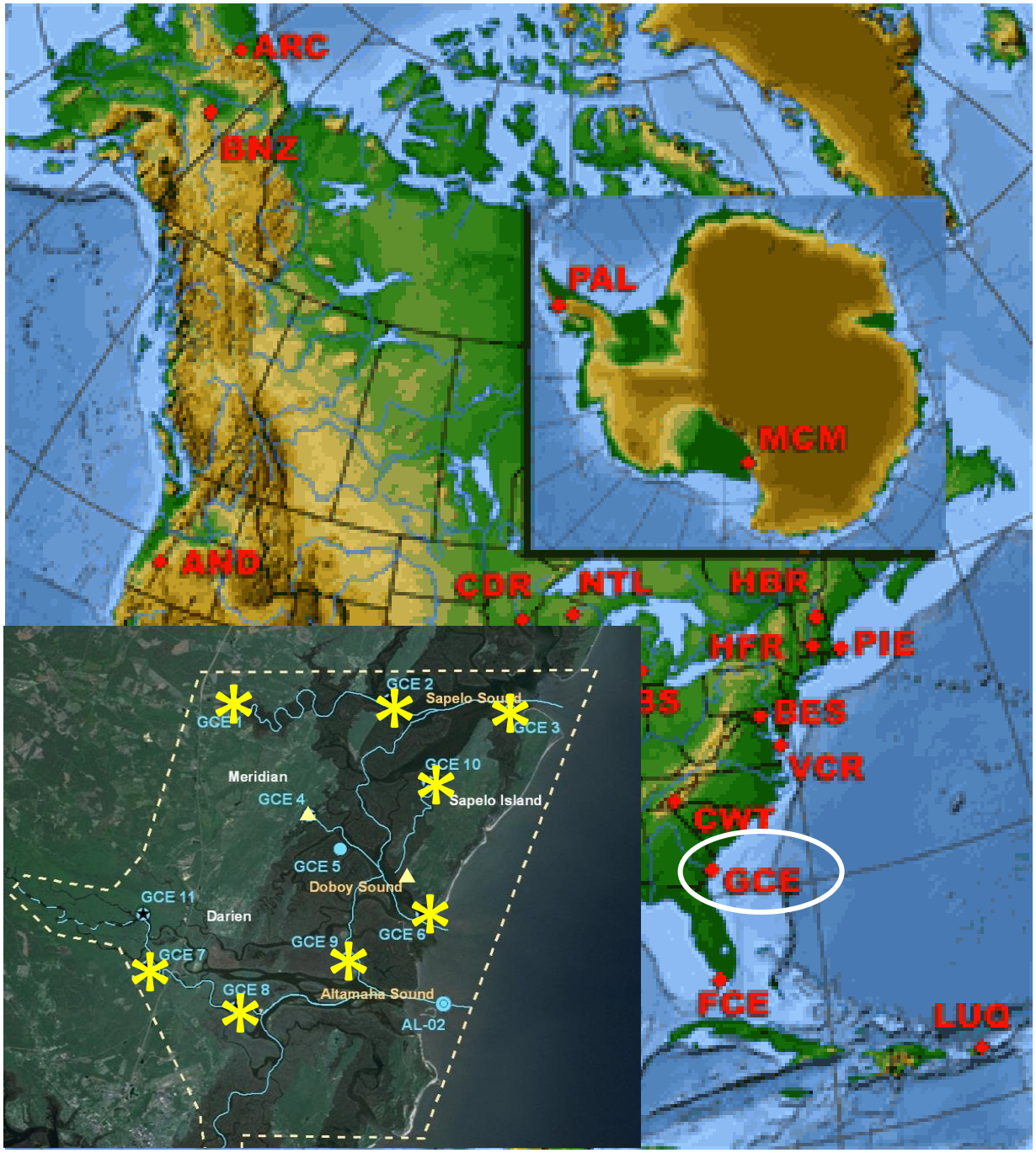
"I can honestly say that without UGAMI I wouldn't be where I am today."

Long Term Ecological Research (LTER)

Long Term Ecological Research (LTER)

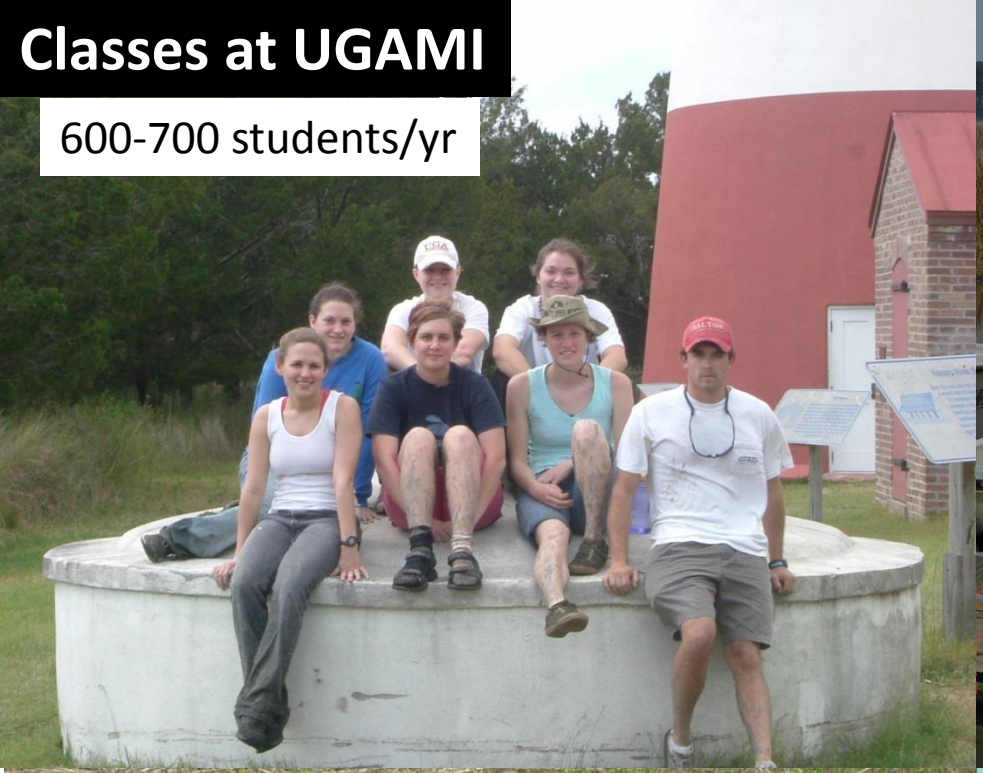
Georgia Coastal Ecosystems (GCE)

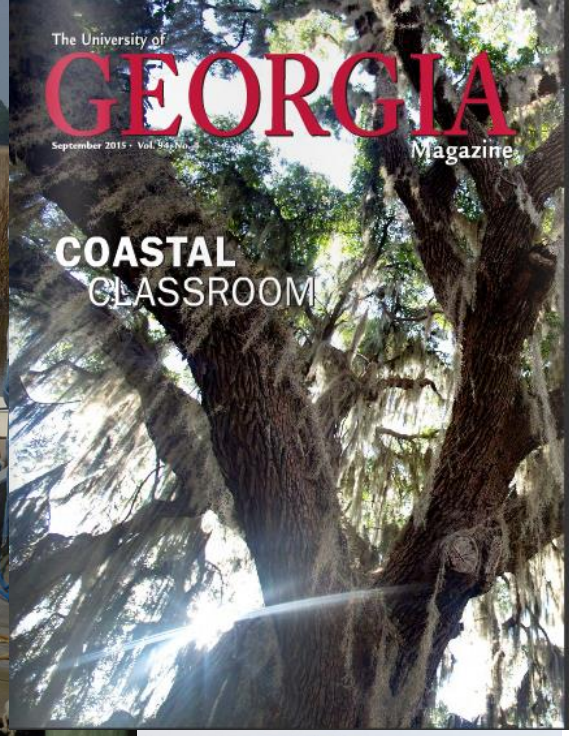
2000-present
22 co-PIs
9 institutions



Classes at UGAMI

600-700 students/yr





"Visiting Sapelo Island with the Honors Science course was by far my favorite memory from my freshman year... "

Residential Instruction

Geography of the Georgia Coast Domestic Field Study Program

Credit offered: GEOG 2610: Geography of Georgia
GEOG 4630: Urban Political Ecology
(6 Credit hours)

Dates: May 9th – May 30th, 2018

Program Costs: $1,160

UGAMI Announces Marine Biology Spring Semester

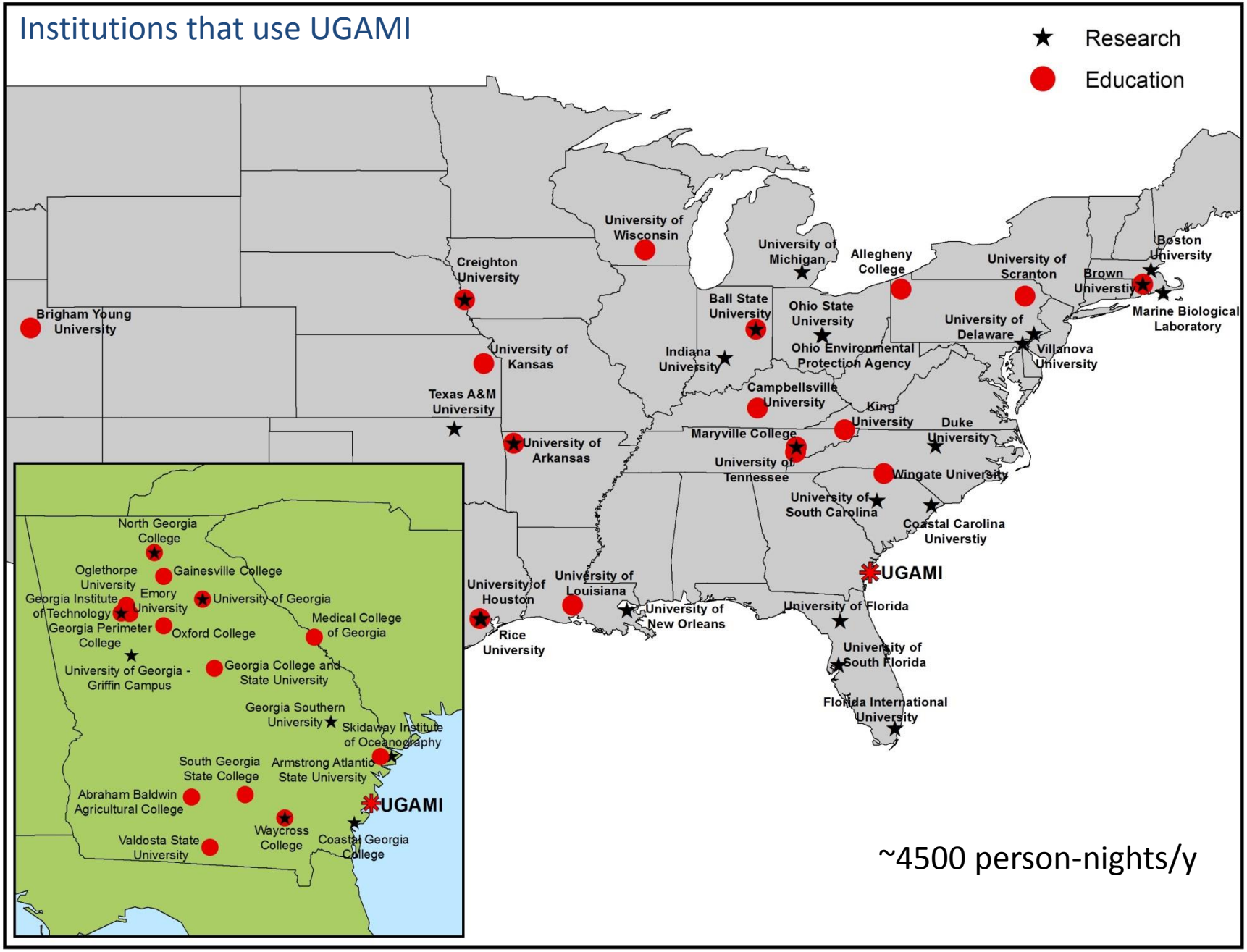
- Marine Biology
- Intro. to Ecology
- Marine Fisheries Biology
- Field Animal Behavior
- Ecology of the GA coast seminar
- Independent study

January 8 – May 2, 2019
Program fee: $6,470

Teacher Workshops

"This experience changed my view of doing science and what science is."

Institutions that use UGAMI

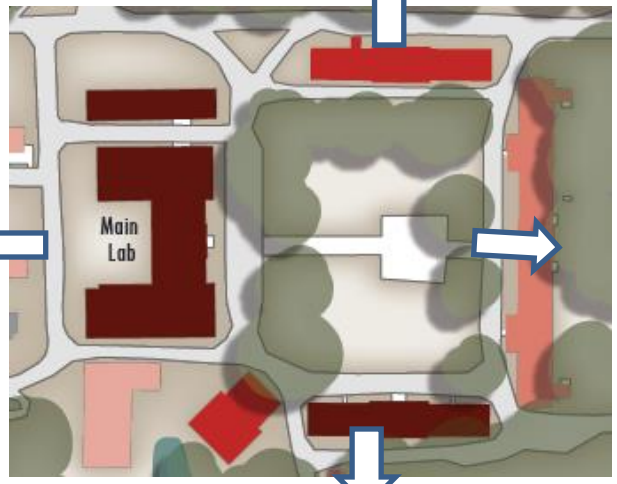


~4500 person-nights/y

UGAMI Main Quad

Carriage House (Admin)

Main Lab



Carriage House (Mixed Use)

Mechanical

Electrical

Plumbing

Mold

Asbestos

Chemical waste

Whiting-Turner 2015

Initial clean-up: Lab 8

UGAMI Strategic Plan

Mission: The mission of the UGA Marine Institute is to provide exceptional opportunities for world-class research and education in coastal ecosystems.

Vision: UGAMI is a financially stable, world-renowned field destination where scientists and other scholars conduct cutting edge research and students have transformative learning experiences.

Priorities:

- Build on excellence in research
- Strengthen educational opportunities for undergraduates
- Further partnerships and engagement
- Increase and manage resources
- Improve and maintain facilities

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- Further partnerships and engagement
- Increase and manage resources
- Improve and maintain facilities

Strategic Goals

4. Increase and manage resources

We will establish sustainable financial strategies for operations and seek to significantly increase the amount of public and private dollars invested in UGAMI, ensuring a stable and diverse funding stream.

Objective 1. Maximize facility use

Objective 2. Establish stable financial feedbacks between grant funding and research support.

Objective 3. Cultivate user groups

Objective 4. Seek additional sources of funding

5. Improve and maintain facilities

We will implement infrastructure improvements that reflect our commitment to optimizing efficiency while promoting responsible reuse of the historic structures that house the Institute's operations, with the goal of enhancing functionality and maintaining competitive facilities.

Objective 1. Address longstanding facilities issues

Objective 2. Develop an overall facilities plan

Objective 3. Provide improved quality space

Improve and maintain facilities

Objective 1. Address longstanding facilities issues

Targeted Components:

- All leaking roofs repaired
- Surplus equipment, vehicles removed
- Accumulated waste cleaned up
- Plumbing, septic, HVAC systems operational in all structures

Objective 2. Develop an overall facilities plan

Objective 3. Provide improved quality space

Improvements

- MR&R – FY’15: New roof for main lab

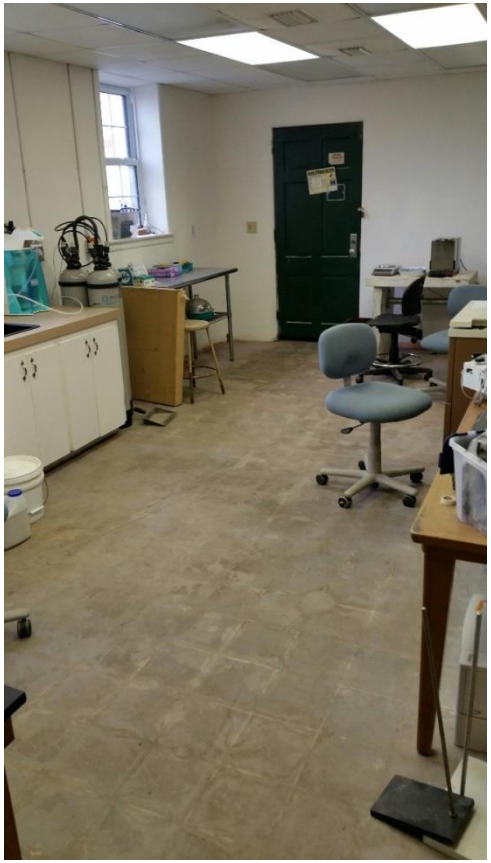
6020: Magnolia Circle

Trailers removed

6021: Magnolia Circle

Remediation

- Asbestos tiles removed (Lab 8)



- Chemicals removed

Improve and maintain facilities

Objective 1. Address longstanding facilities issues

Targeted Components:

- All leaking roofs repaired
- Surplus equipment, vehicles removed
- Accumulated waste cleaned up
- Plumbing, septic, HVAC systems operational in all structures

Objective 2. Develop an overall facilities plan

Targeted Components:

- Conceptual design for campus that identifies functions of current and planned structures
- Maintenance plans for structures (painting, septic tanks, etc.)

Objective 3. Provide improved quality space

UGAMI Master Plan 2017

RECENT & FUTURE PROJECTS - MAIN

1- POND CIRCLE RESIDENCES

New residential community to replace all trailer housing across UGAMI

3 - 3BR Cottage Homes : 9 BR
2 - 2BR Cottage Duplexes : 8 BR
2 - 1BR Cottage Duplexes : 4 BR
Total Bedrooms : 21 BR

2- COMMUNITY SPACE

Laundry & Lounge

3- BIRL

Class group housing -
8 3-bed units (24 total beds)
Community kitchen

4- MAIN LABORATORY

Renovate lab and lab service areas; Convert existing electrical shop and storage area into lab & lab service

4b- HOOD BUILDING

Relocate hoods to main lab

5- BSL3 LAB

Relocate from center of open space to existing footprint of building to be demolished

6- SEAWATER SYSTEM UPGRADES

Install new seawater collection system

7- OFFICES & VISITOR'S CENTER

Renovate for administrative offices and visitor's center

8- OLD DORMITORY

Assess structural integrity

9- QUAD RESTORATION

Turkey Fountain restoration;
Clock Restoration;
Parking relocation to peripheral locations

10- ADMINISTRATIVE/SUPPORT

Provide centralized laundry room

11- SUPPORT SHOPS

Co-locate automotive & electrical/maintenance shops

12- COMMUNITY SPACE

Relocate carpentry shop;
Provide student/researcher activity cener

Improve and maintain facilities

Objective 3. Provide improved quality space

Targeted Components:

- Renovation of the main laboratory (to accommodate basic labs; wet lab; common use equipment; dedicated teaching lab)
- Renovation of the Carriage houses
- Upgrade housing for visitors

UGAMI RESEARCH COTTAGES

PROJECT BACKGROUND

Appropriate accommodation for visiting researchers is a significant need.

UGAMI housing is currently provided with 15 aging mobile home trailers and two dormitories that each house up to 24 people. Because the dorms are more conducive to supervised groups, they are priotized for classes while visiting researchers are generally accommodated in the trailers. Class groups visit nearly every weekend during the academic year, and summer residential courses fill the dorms for longer stints. As UGAMI is currently in the process of expanding its educational offerings to host semester-long experiences for undergraduates, dorm availability will be further constrained.

The research program at UGAMI is also thriving.

Visiting investigators from across the globe take advantage of UGAMI's unique research setting, and the site supports thesis and dissertation research for numerous graduate students each year. During the summer field season UGAMI is often at full housing capacity. As a result, professors, technicians, and students are housed in outdated trailers. The oldest trailers, which are located in Magnolia Circle, are particularly difficult to maintain and often suffer from mold and other problems. Modernization of the housing stock is a top priority in order to meet the reasonable expectations of visiting scientists.

PROJECT DESCRIPTION

The UGAMI Master Plan envisions the construction of a modern residential community to support the research enterprise.

The proposed research cottages will be designed with layout and size variations in order to provide agile support for the range of accommodation needs research teams require. Attention to resource efficiency, durability, and comfort will drive the design and construction standards for high quality, sustainable researcher housing. Sited in Pond Circle, adjacent to the main UGAMI research facilities, the new residential community will tie into existing campus infrastructure and be served by a Commons building with laundry and social space. Coastal resiliency is provided in the architecture and construction of the cottages which are situated in a naturalized environment. Floor elevations are raised above the existing ground to accommodate storm surges and shifts if hydrologic conditions.

Appendix A: UGAMI space needs

- Laboratories
- Offices
- Housing
- Common/Meeting Space
- Employee Infrastructure
- Additional Considerations

Appendix A: UGAMI space needs

- Laboratories
  - 4 labs that can be assigned/rented to scientists working for extended periods – i.e. a year at a time. (300 ft^2)
  - 6 labs that can be assigned/rented to scientists for short-term use – i.e. several months at a time (300 ft^2)
  - Multi-user lab for weekend, other use – i.e. days to weeks (classes, visiting researchers) (650 ft^2)
  - Wet lab with running seawater (tanks for organisms; bench area for washing samples) (650 ft^2)
  - Dedicated teaching lab (for semester courses) (1000 ft^2)
- Offices
- Housing
- Common/Meeting Space
- Employee Infrastructure
- Additional Considerations

Lab Planning

Objective: Design that meets programmatic goals in the strategic plan

- Upgrade electrical- replace central switchgear, design modern branch circuitry
- Upgrade HVAC- remove oversized split systems and replace with DOAS and auxiliary cooling to avoid recurrence of mold
- Upgrade plumbing systems- potable and seawater
- Remove hazardous materials (asbestos, mold)

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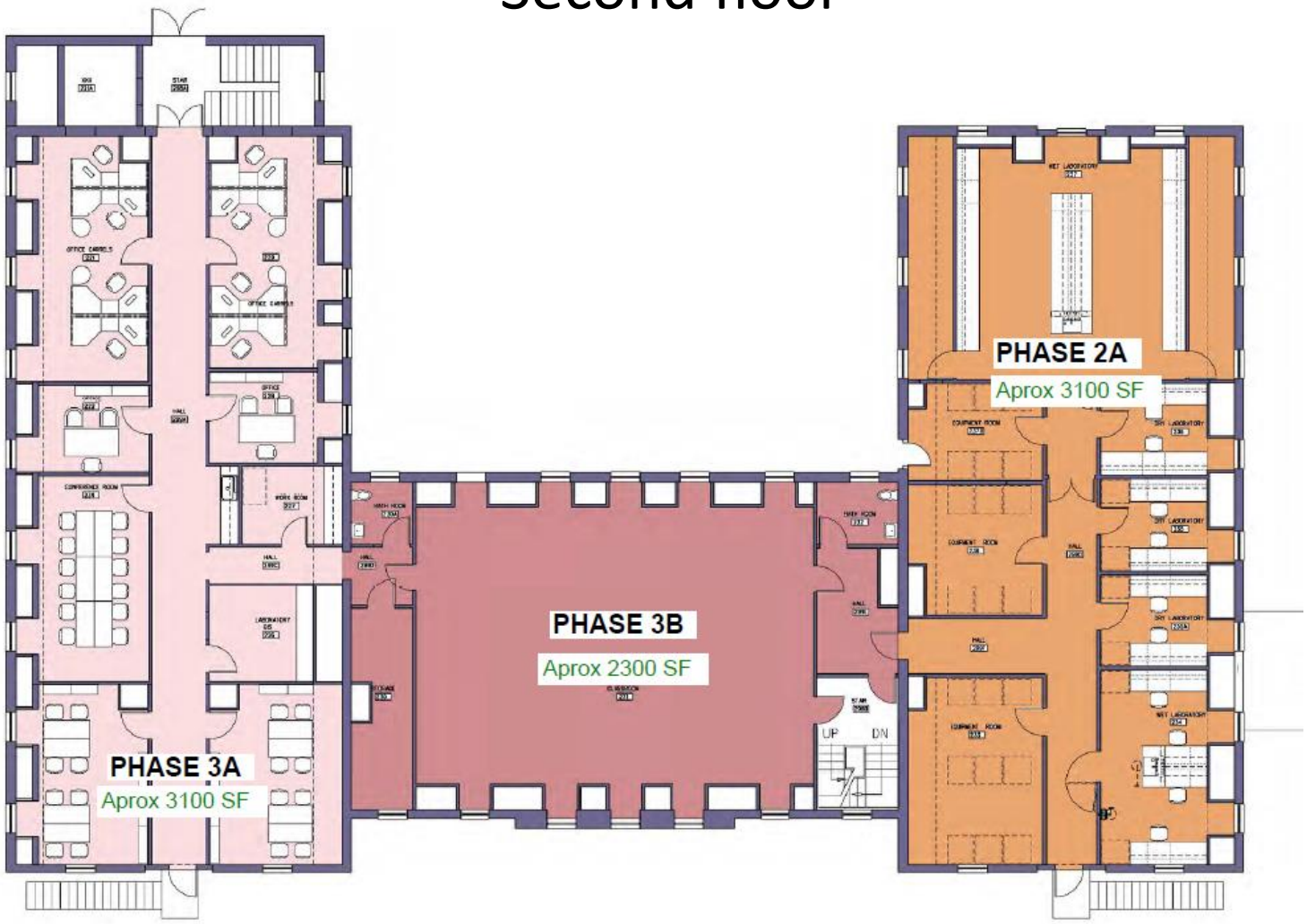
Proposed layout

First floor

Proposed layout

Second floor



Phase 1A Improvements

- Mechanical system replacement (DOAS unit that can handle half the building)
- Electrical upgrades (relocating switch gear, replacing branch panels)
- Water and septic tank enhancements
- Life safety improvements

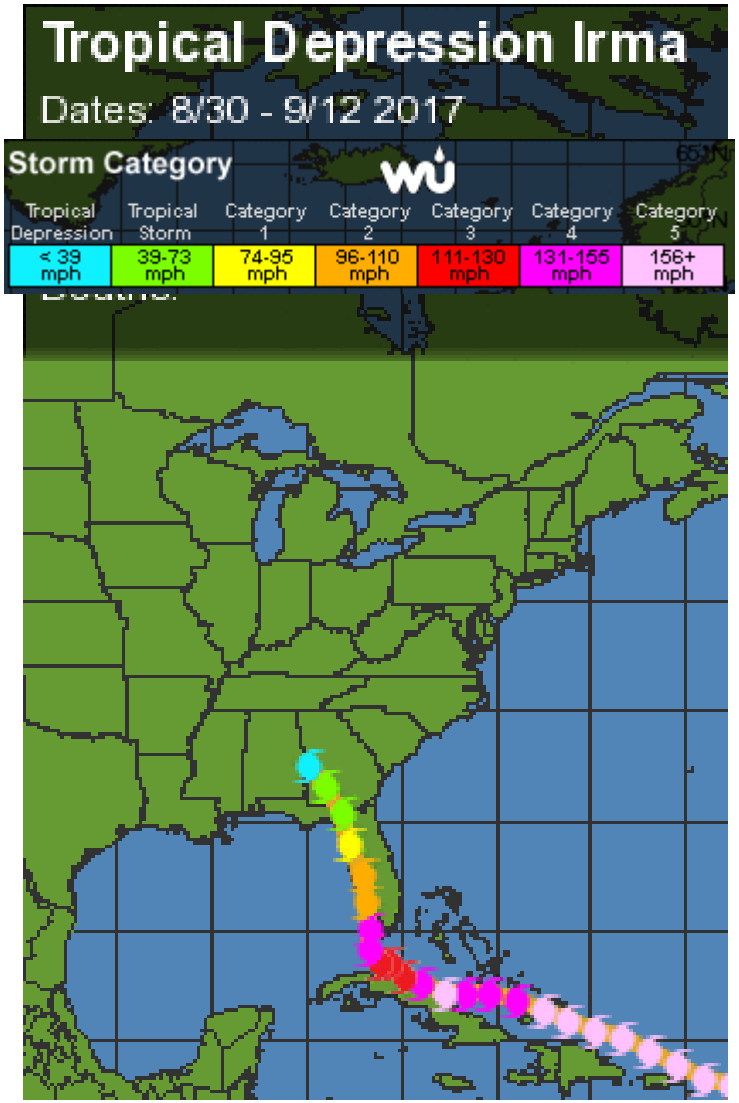
Phase 1A
completed April 2017

Visitor lab

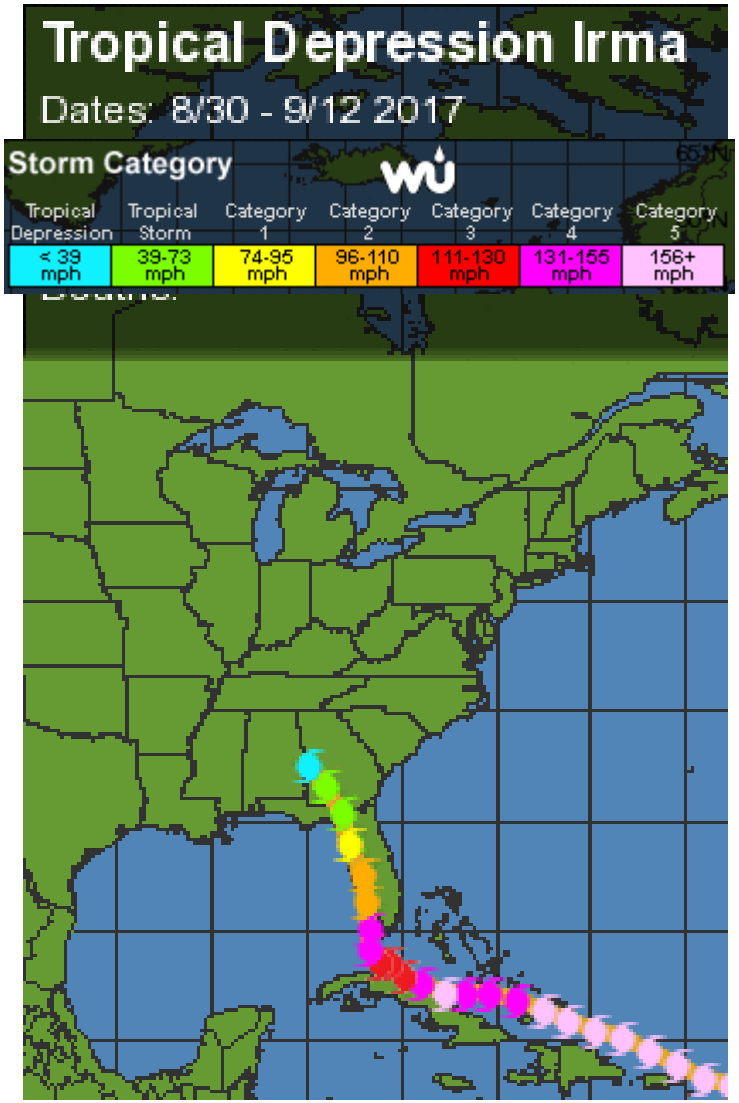
Teaching lab

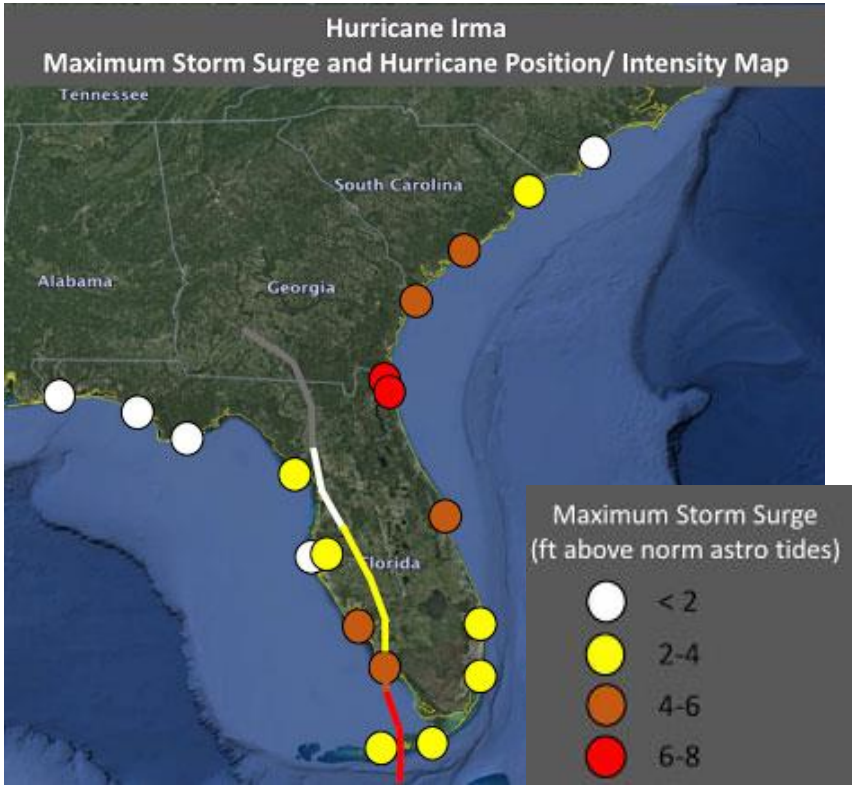
June 2017

Hurricane Irma (9/11/17)



Hurricane Irma (9/11/17)





Credit: [Hal Needham/NOAA Tides and Currrents]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09-11-2017 10:54:38


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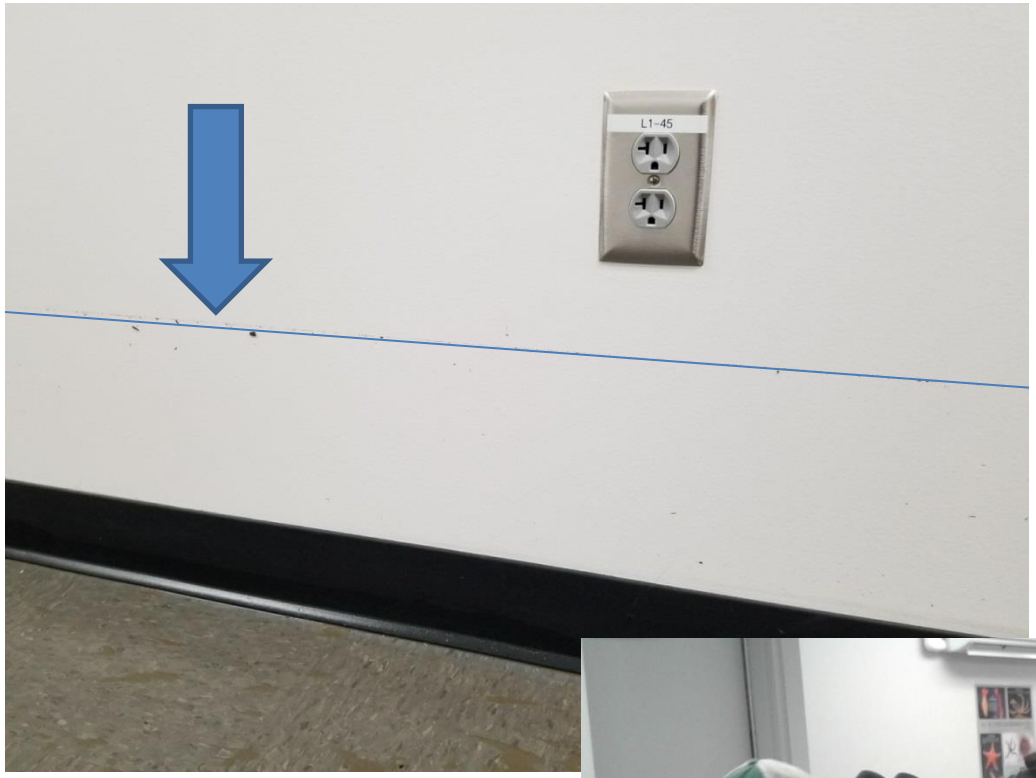
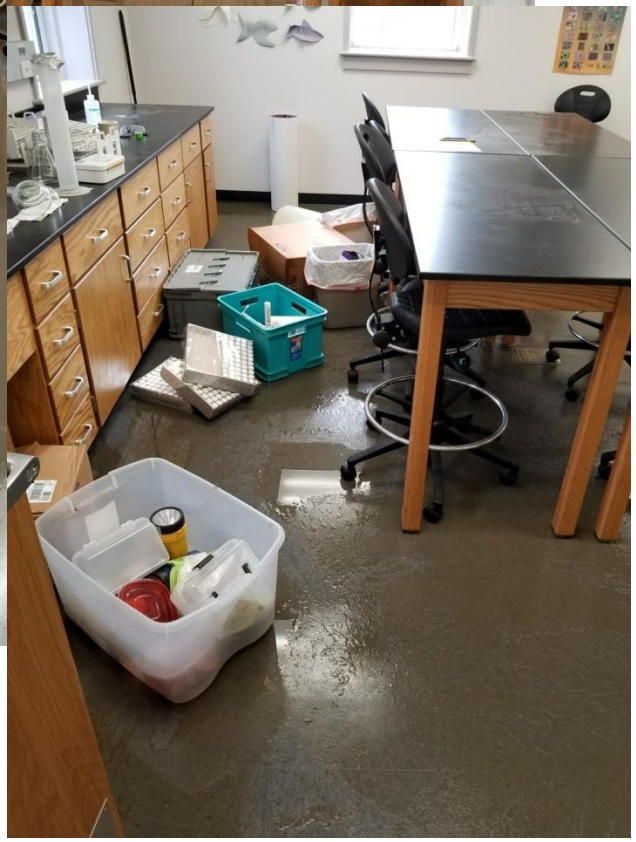
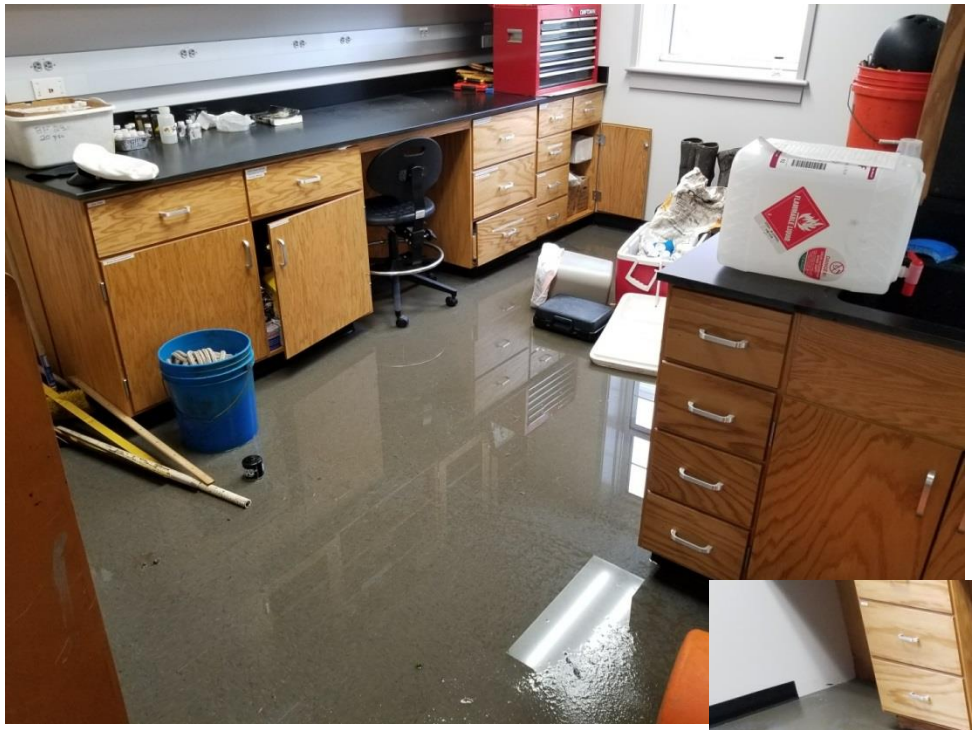
Water Line



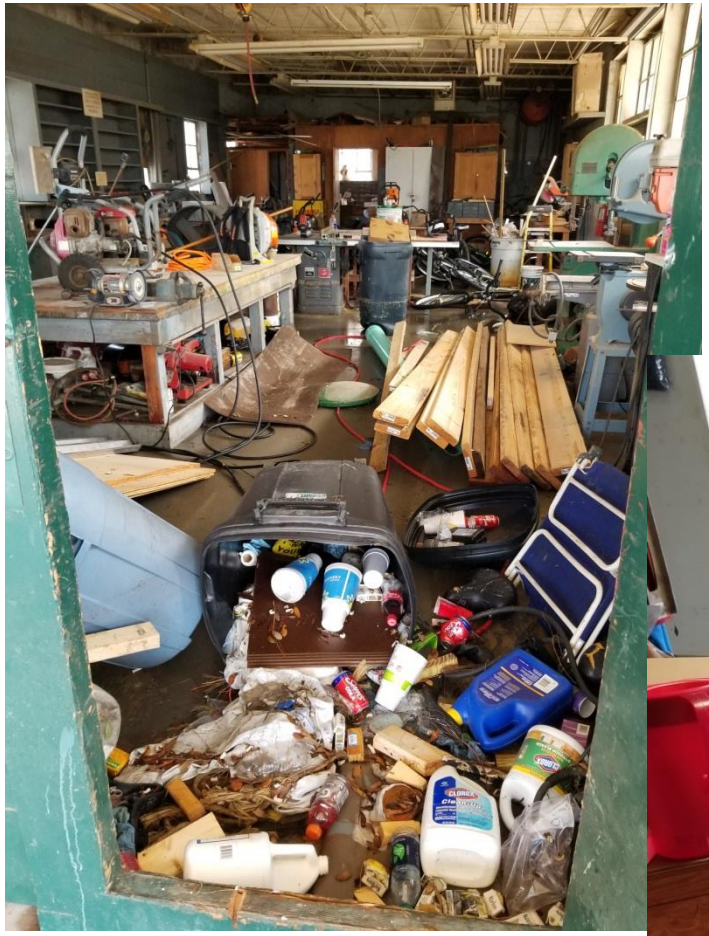


Teaching Lab

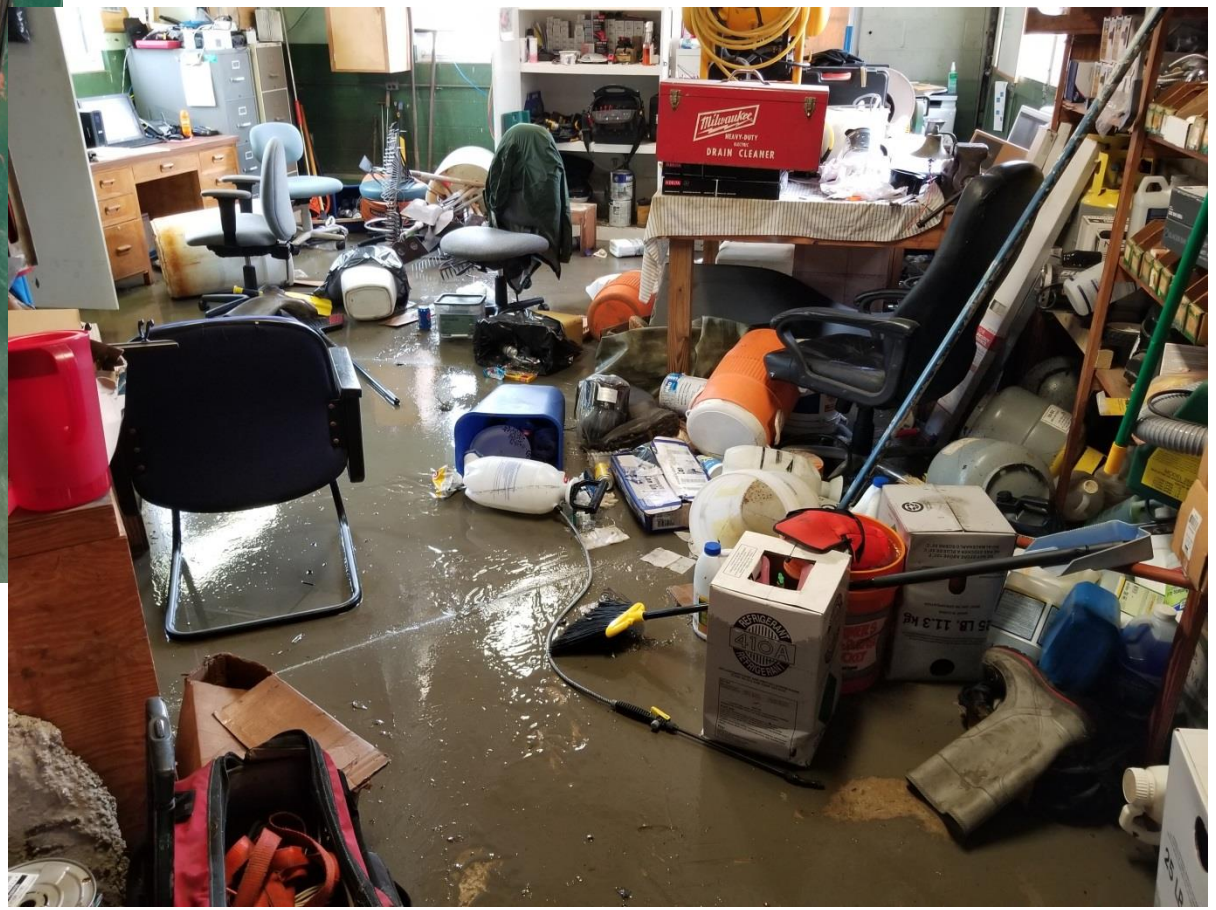
Visitor Lab



Carpenter Shop



Electric Shop



Hurricane Recovery

Immediate (weeks)

- Initial clean-up
- Temporary storage
- Temporary offices
- Mold remediation

Recovery

- How to maintain mission/operations?
- How to rebuild?

Hurricane Recovery

- Every disaster is also an opportunity
- Requires good partnerships - Parker Young, State DOAS, UGA Insurance and Claims Management
- Rather than just replace, work with our partners to find ways to upgrade and correct design deficiencies
- Combine restoration (insurance) funds with other UGA funding

Parker Young Construction
DISASTER REPAIR SPECIALISTS

Customer Portal | Ready Action Plan | Blog

Emergency? (770) 368-1000

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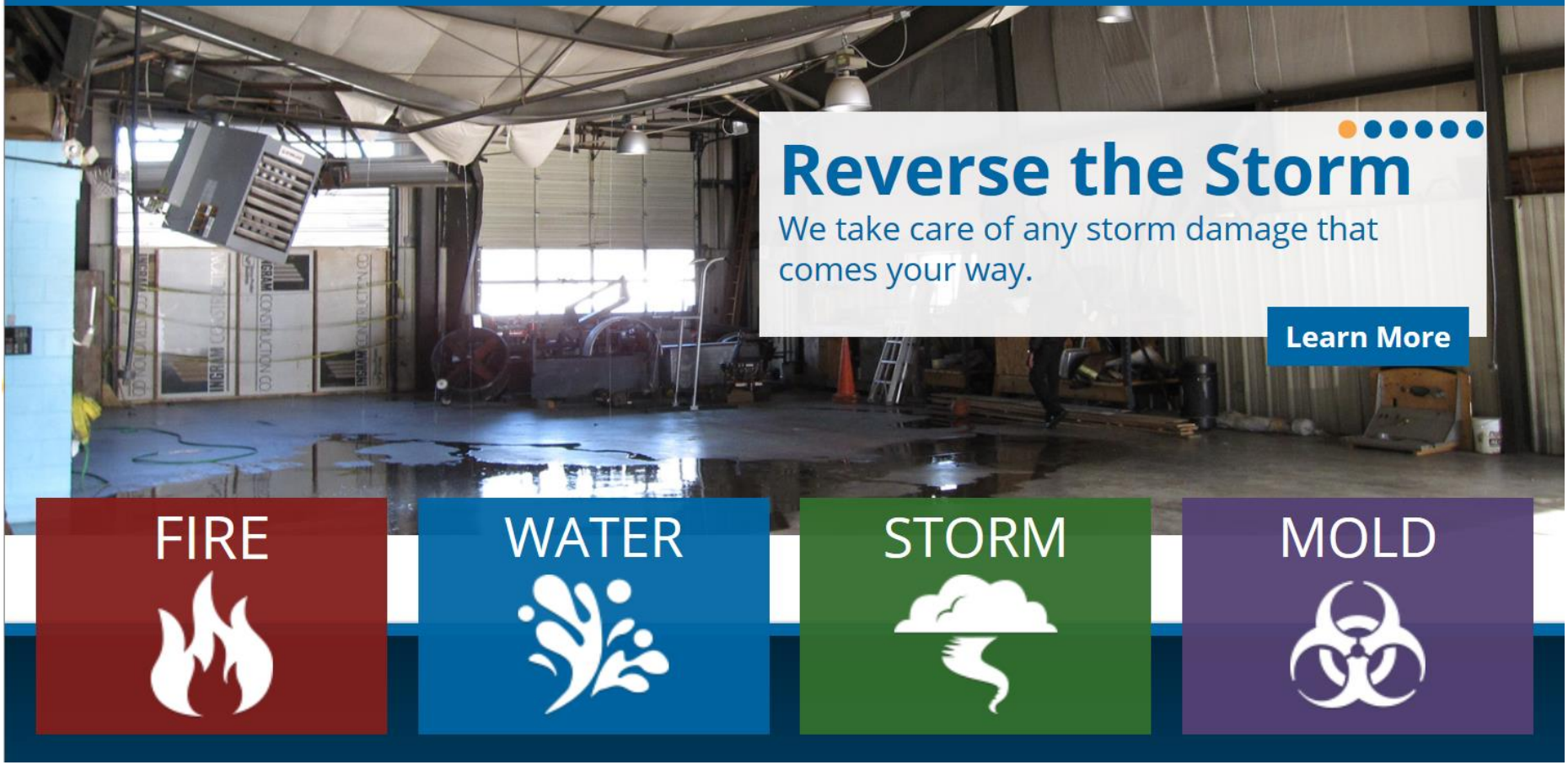


UGAMI Recovery and Improvement

Lab Building

Lab Annex (formerly Electric Shop)

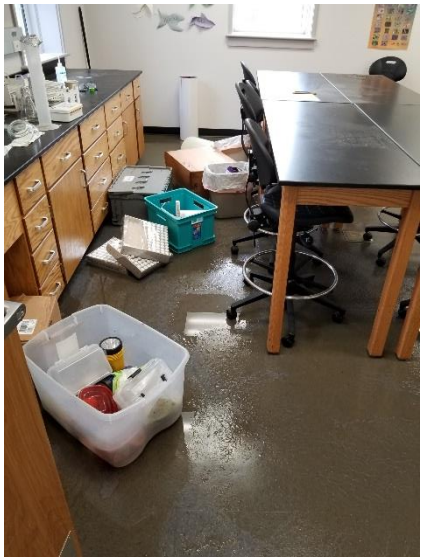
Carriage Houses (Administration; Student/Staff Services)

Rebuilding the Lab

- Casework redesigned

Before

Flooded



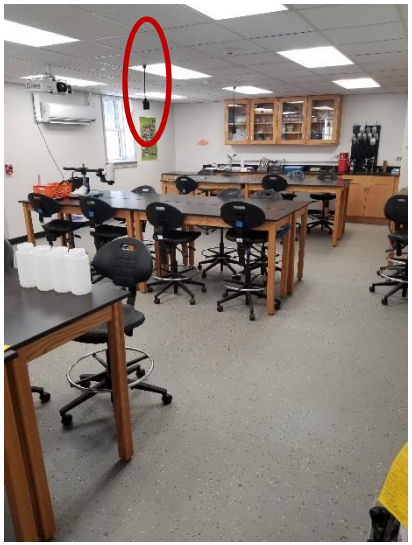
After

Rebuilding the Lab

- Floor outlets removed

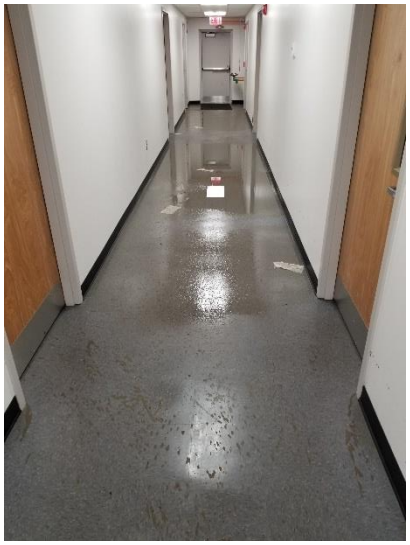
Flooded

After



- Floors resealed; tiles removed

Flooded

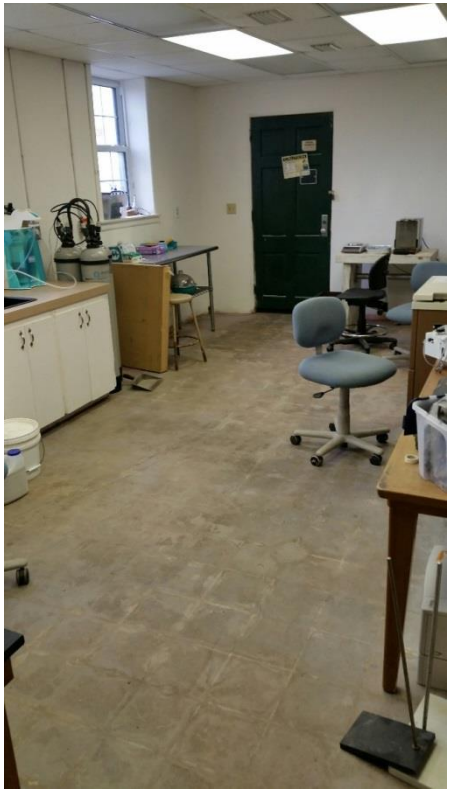


After

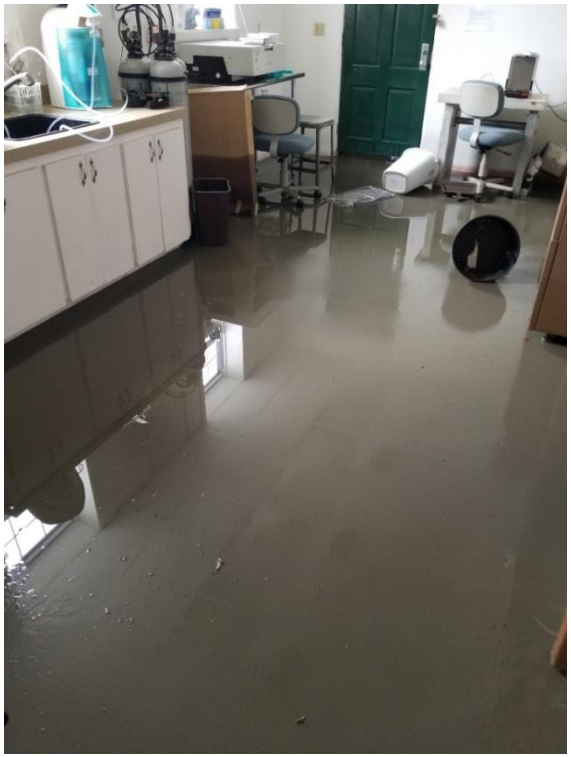
Rebuilding the Lab

- Small labs in west wing and central hall- opportunity

Before

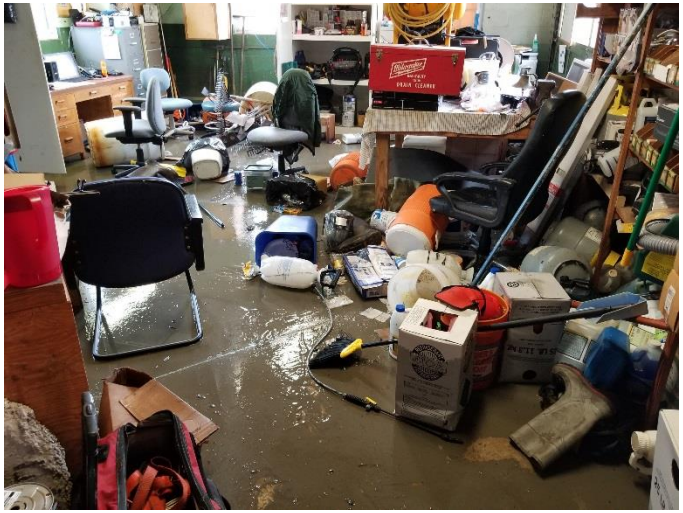


Flooded



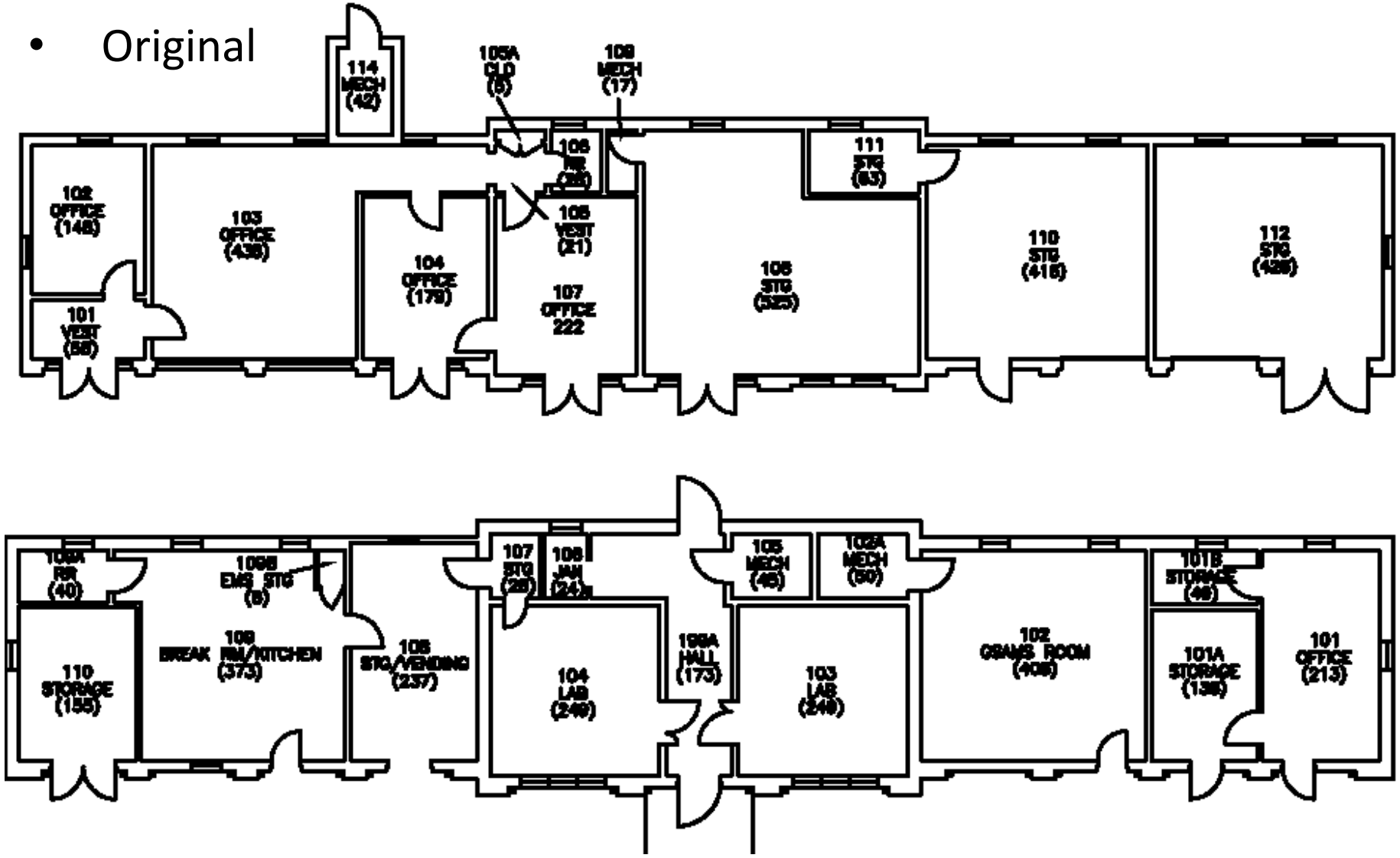
After

Lab Annex (Electric Shop)



Carriage House Layout

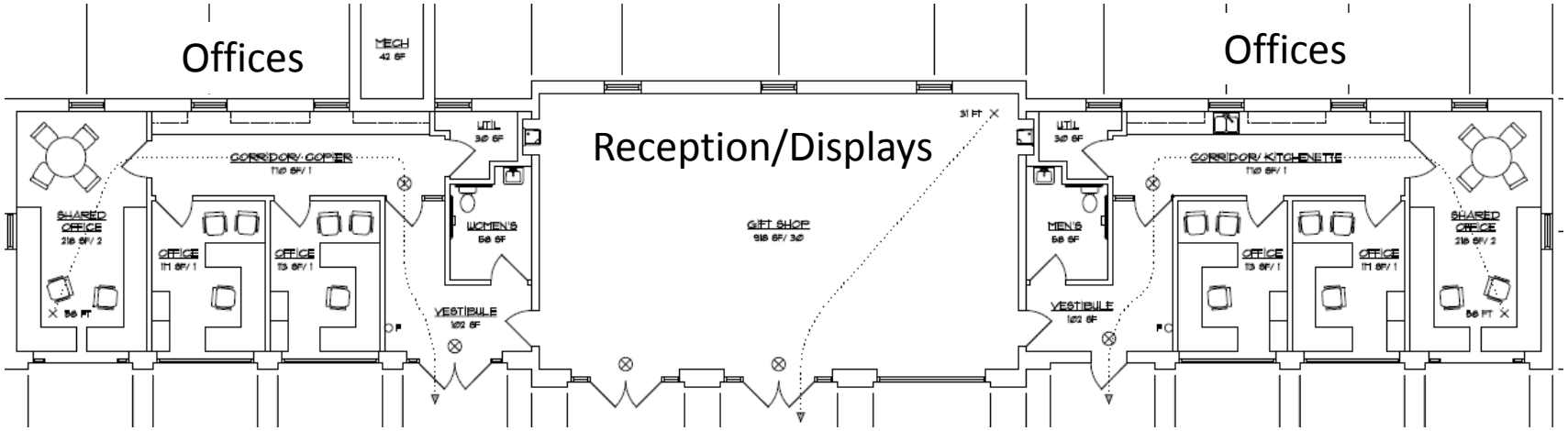
- Original

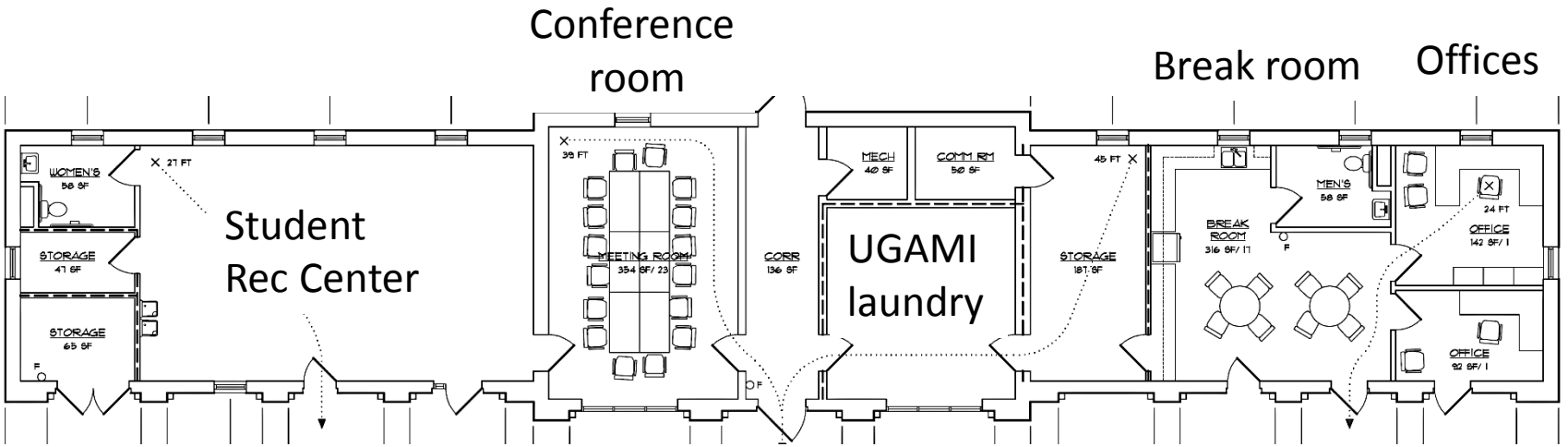


Carriage Houses

Carriage House Layout

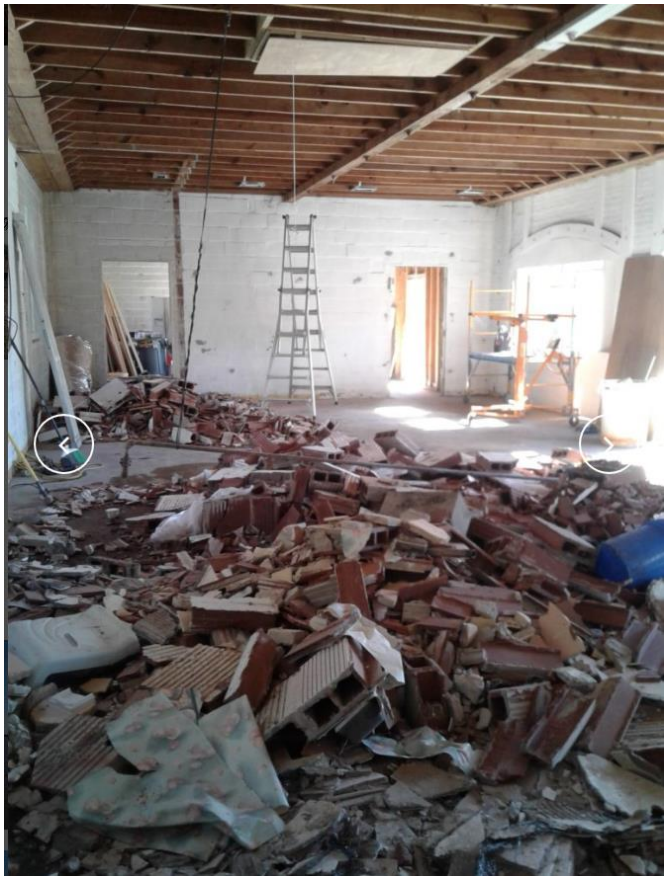
- Redesigned





Carriage Houses

- Buildings gutted



- New roofs installed

Carriage Houses

- Custom IT work!

Carriage Houses

- Floors raised

Carriage Houses

- Raised condensing units, electrical outlets

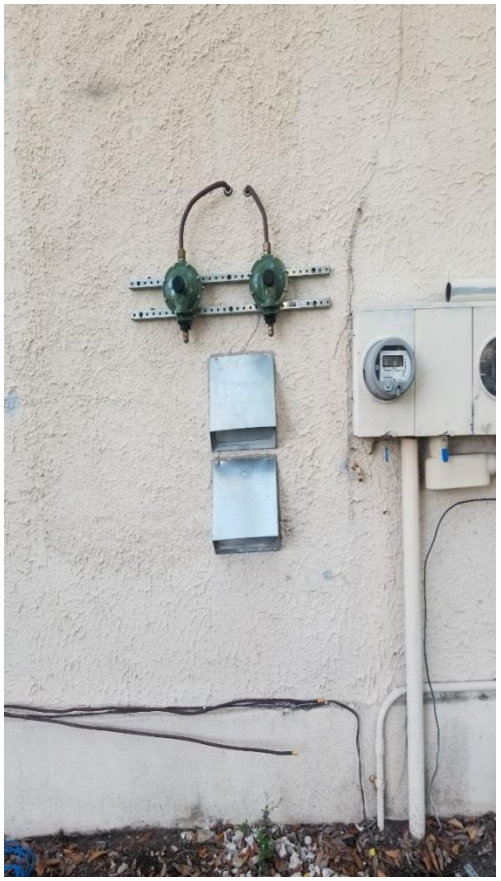
Carriage Houses

- Interior furnishing and finishes

Carriage Houses

- Sewer backflow preventers

- Raised dryer exhaust



Carriage Houses

- Door openings reduced and modified

Before

After

Carriage Houses

- Penetrations sealed

- CMU wall below windows

Additional Prevention

- Flood barriers

Additional Prevention

- Flood barriers installed (Hurricane Florence)

Hurricane Recovery

- Rather than just replace, work with our partners to find ways to upgrade and correct design errors
- Combine restoration (insurance) funds with other UGA funding
- HVAC and central power changes meant lower cost of repair
- Some functions originally in main lab program could be moved to carriage house (ex conf room) allowing a simplified rebuild of second floor

Cost estimates

Pre-hurricane:

Work completed

- Lab Phase 1A: $1.4 M

Original estimate to complete renovations

- Lab Phases 1B, 2-5: $4.7 M
- Carriage houses: $1.6 M

Original estimated total $7.7M

Post-hurricane:

- Actual cost for Carriage houses and Lab Phases 1B, 4 & 5: $700 K (over insurance cost to get us “back”)
- Revised estimate for completing renovations (Lab Phases 2 & 3): $1.75 M

New estimated total $3.85 M

Take home messages

- Importance of having road map
- Importance of partnerships (insurance, restoration contractor)
- Savings of $$ through leveraging of funds
- Advancing timing of master plan (good for both research and teaching)
- Incorporating future resilience into rebuilding

Wade Sheldon Photography
www.sheldonphoto.net