



THE COASTAL SOCIETY

**Margaret A. Davidson**

**Coastal Career Development Workshop**

*in conjunction with*

**NCCF's 2025 Coastal Summit**



North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*

April 9, 2025

12:30pm-4:20pm ET

THANK YOU

TO OUR SPONSORS & PARTNERS



North Carolina  
Coastal Federation  
*Working Together for a Healthy Coast*



THE COASTAL SOCIETY





# WORKSHOP PLANNING TEAM



DR. JENNIFER BIDDLE  
UNCW Faculty  
TCS President



JEFF FLOOD  
Virginia CZM  
MAD Committee Chair



ERIN FLECKENSTEIN  
NCCF  
Summit Planning Lead



KATE FULLER  
TCS Board  
MAD/Comms Committee Member



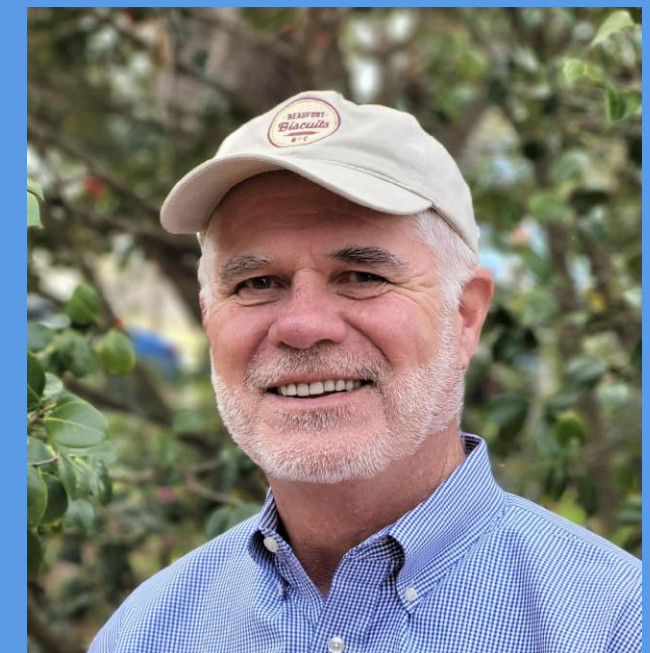
RILEY LEWIS  
Coastal Carolina Riverwatch  
TCS Board & MAD Committee Member



GENEVIEVE GUERRY  
TCS Board  
MAD Committee Member



KELLY GRAVES  
TCS Board  
MAD Committee Member



JEFF BENOIT  
TCS Treasurer  
Development Committee Chair



## **Agenda**

**12:30pm      Registration Check-In**

**1:00pm      Welcome & Workshop Overview**

**1:10pm      Margaret's Legacy & MAD Fellowship Overview**

- Dr. Jennifer Biddle, TCS President/UNCW - *Margaret's Legacy*
- Aranzazu Lascurain, NOAA - *MAD Fellowship Program*

**1:25pm      Lightning Round #1: Coastal Employment Opportunities**

- Christy Perrin, NC Sea Grant/Water Resources Research Institute - *Outreach & Educational Careers*
- Katie Balaze, McAdams - *Private Sector Consulting Careers*
- Cayla Cothron, NC Sea Grant - *Planning & Policy Careers*
- Brayden Gordy, Lynker Inc. - *Federal Contracting Careers*

**1:50pm      Break**

**2:00pm      Breakout Session #1**

**2:40pm      Transition to Original Room Setup**



<b>2:45pm</b>	<b>Lightning Round #2: Coastal Careers Contd &amp; Higher Education Opportunities</b> <ul style="list-style-type: none"> <li>● Riley Lewis, Coastal Carolina Riverwatch - <i>Environmental NGO Careers</i></li> <li>● Dr. Will Ferris, Duke University - RESILE/CIRCAD - <i>Developing Resilient Communities: Environmental &amp; Economic Considerations</i></li> <li>● Dr. Jennifer Biddle, UNCW - <i>Graduate Programs in Coastal &amp; Ocean Policy</i></li> <li>● David Cerino, Carteret Community College - <i>Careers in Aquaculture</i></li> </ul>
<b>3:10pm</b>	<b>Transition to Breakout Session #2</b>
<b>3:15pm</b>	<b>Breakout Session #2</b>
<b>3:55pm</b>	<b>Additional Networking</b>
<b>4:15pm</b>	<b>Closing Remarks</b>
<b>4:20pm</b>	<b>Adjourn</b>



Margaret A.

Davidson

In Memoriam to Our Friend and  
Colleague

1950-2017

S.C. Sea Grant Consortium Executive Director, 1983-  
1995

Visionary, Champion, Mentor, Intellectual, Networker,  
Leader, Trailblazer, Unique, Compassionate, Devoted,  
Extraordinary, Respected

We will miss Margaret – her legacy will be continued  
through our work





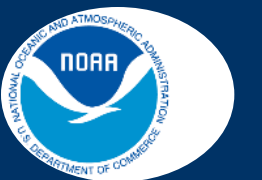
**Margaret A. Davidson  
Graduate Fellowship  
at the National Estuarine Research Reserves**

*Developing the next generation  
of coastal leaders.*

***2025 NC Coastal Summit***

**NOAA Office for Coastal Management**

***April 9, 2025***





# Fellowship Basics

- Two-year fellowship at each of the 29 reserves
- Focus on research that informs coastal policies
- Each reserve sets their research priorities
- Each fellow is employed by reserve's university partner



# Research Question Examples

*All projects combine field work, research, and community engagement.*

- Water level monitoring and change
- Ecosystem services
- Nutrients and water quality
- Restoration
- Invasive species
- Socio-ecological resilience

# It's a Great Package.

The Davidson Fellowship provides opportunities to



- Address today's coastal challenges
- Develop marketable career skills
- Build a professional network
- Partner with universities and communities



# About the National Estuarine Research Reserves



- Network of 30 reserves
- Focus on estuary and community health
- Includes research, stewardship, training, and education components

# About Margaret A. Davidson

- A visionary in science-based coastal management
- Pushed for innovation and for shaking things up
- Raised the bar to help coastal communities thrive





# Career Skills Development

- On-site career guidance and mentoring
- Career readiness training, including science communication, project management, and leadership
- Professional development workshops





# Building Your Professional Network



- Meaningful cross-discipline research projects alongside scientists, community leaders, and other organizations
- Networking with fellowship peers and professionals in reserve system, NOAA, the university, and community



# The University Partnership

Partnership between reserves  
and faculty advisors ensures  
project meets the needs of the  
fellow and the reserve





# Is this a good fit for you?

# Timeline

June to December 2025	December 20, 2025	January to March 2026	April to May 2026	June to July 2026	August 1 or September 1, 2026
Call for applications	Applications due	Application review	Funding recommendations  <i>(pending FY2025 agency allocations)</i>	Students notified	Fellowship begins

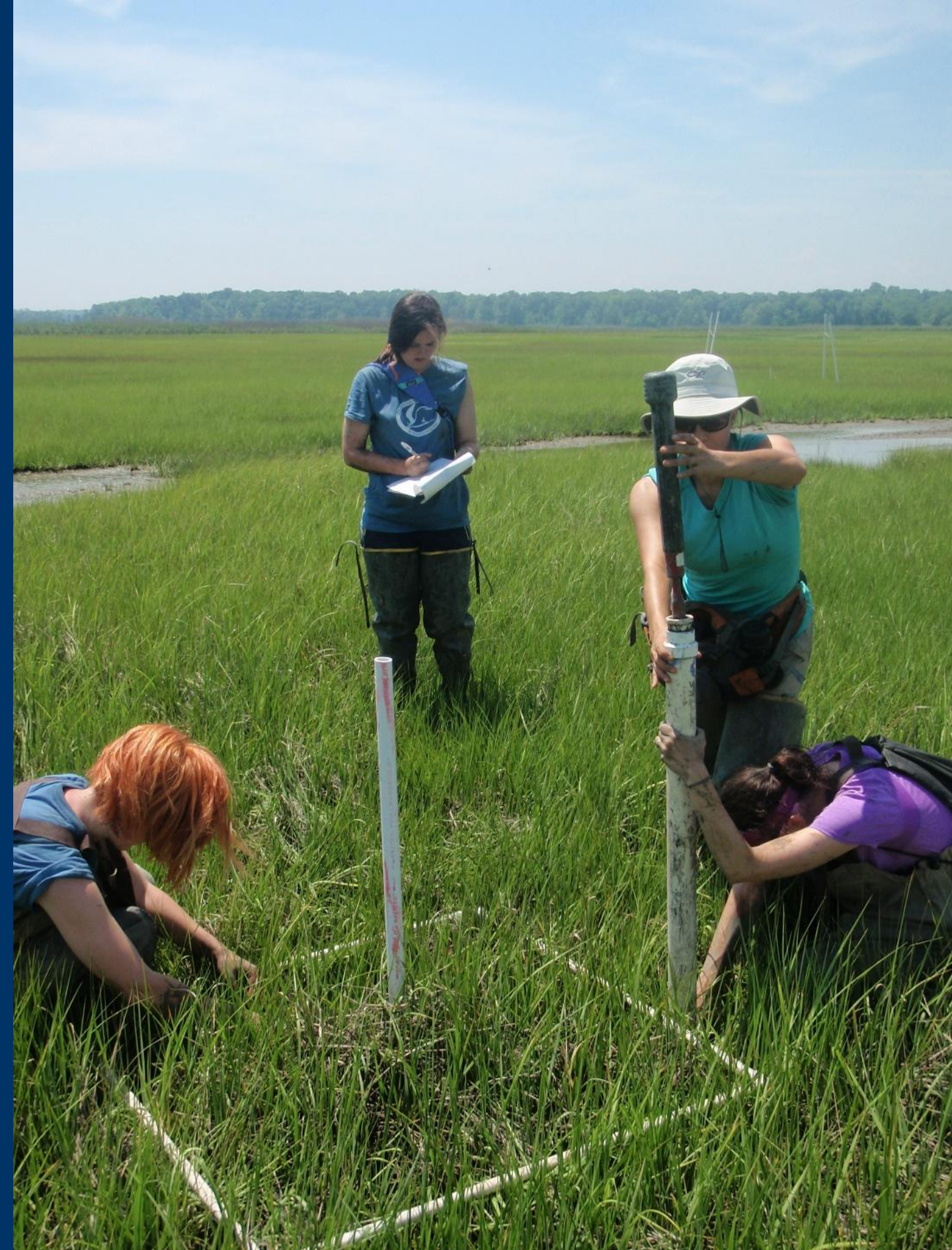


# Applicant Eligibility

- Admitted to or enrolled in master's or doctoral program at U.S. accredited college or university
- Full-time student at time of application
- U.S. citizen or permanent resident of U.S. states or territories

# Funding

- NOAA funding to university: \$41,000 per student for research and travel
- NOAA funding to reserve: \$7,000 for equipment and supplies





# Next Steps

Talk to your nearest research reserve about their Davidson Fellowship ideas!

Visit website for the latest news:

*[coast.noaa.gov/nerrs/research/davidson-fellowship.html](https://coast.noaa.gov/nerrs/research/davidson-fellowship.html)*



# Contact

- **Research Reserve Representative:**  
*URL: [coast.noaa.gov/nerrs](https://coast.noaa.gov/nerrs)*
- **NOAA:** *[ocm.davidsonfellowship@noaa.gov](mailto:ocm.davidsonfellowship@noaa.gov)*

Thank you for your time!





# Panel 1: Coastal Employment Opportunities



CHRISTY PERRIN

NC Sea Grant/  
Water Resources Research Institute  
Outreach & Educational Careers



KATIE BALAZE

McAdams  
Private Sector Consulting Careers



CAYLA COTHRON

NC Sea Grant  
Policy & Planning Careers



BRAYDEN GORDY

Lynker, Inc.  
Federal Contracting Careers







# Extension- a career unexpected



Christy Perrin  
Sustainable Waters and Communities Coordinator

April 9, 2025





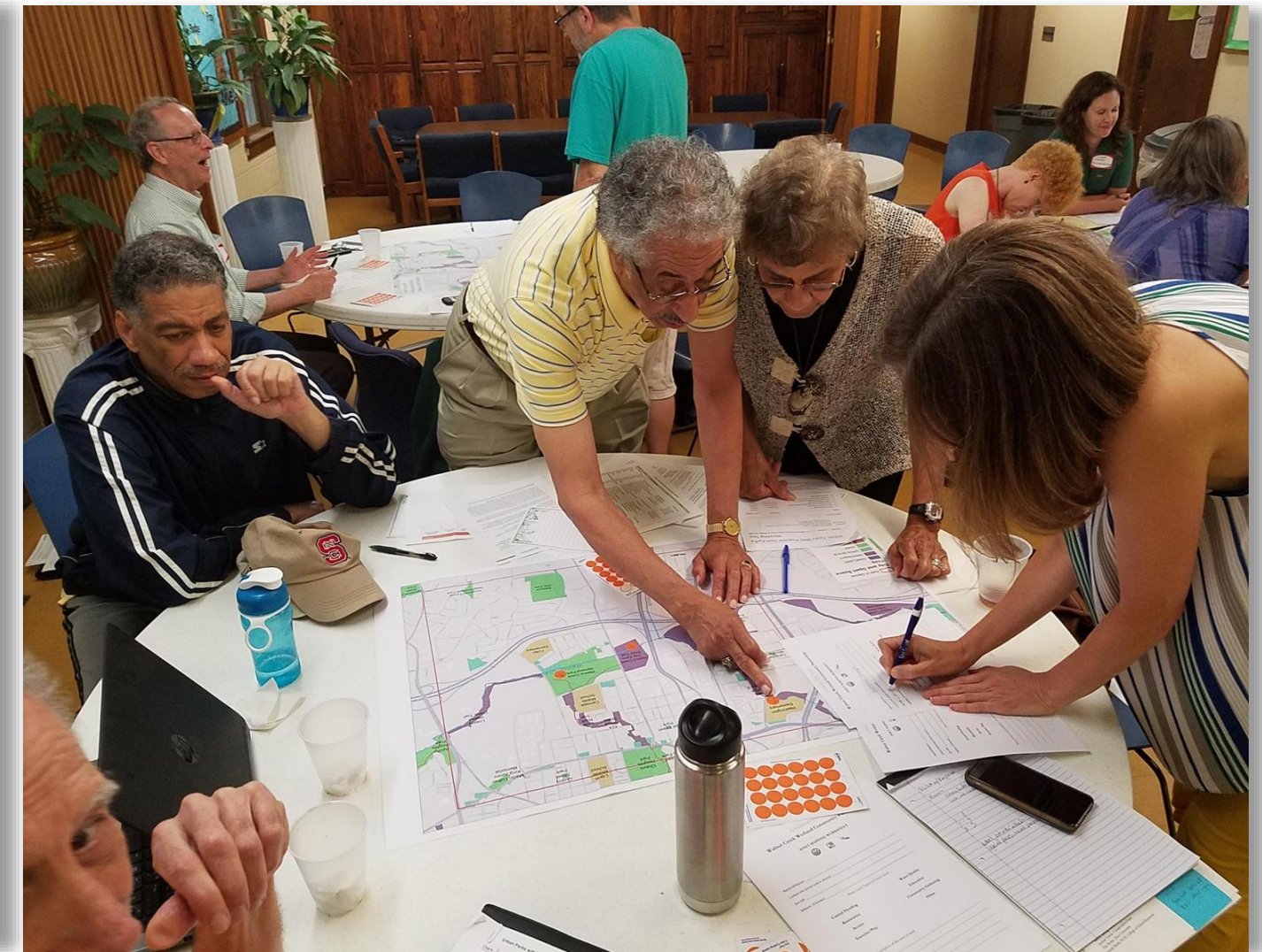
# About Christy

- B.S. Animal Science, Wildlife biology minor, University of Vermont ('93)
- Duke Lemur Center
- MPA, NC State ('98)
- Assistant, Natural Resources Leadership Inst., NC State (1998- 2000)
- Director, Watershed Education for Communities & Local Officials, NC State Extension (2000-2013)
- Certificate in Sustainability, UVM (2012)
- Current- NC Sea Grant/ WRRRI
- Life-long learner!





# *Extension* professional for WRRRI & NC Sea Grant



I convene people to listen, share their gifts, collaborate, and create solutions for people & nature





Major skillsets used:

- ✓ group facilitation
- ✓ conflict resolution
- ✓ environmental education
- ✓ cultural competency
- ✓ grant writing
- ✓ project management

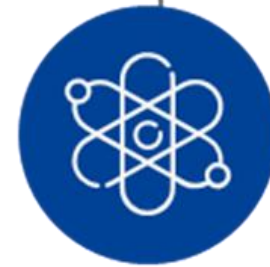


... to create a strong and sustainable economy, a healthy environment, and resilient and inclusive communities. (NOAA +UNC System)

# Sea Grant's Mission & Goals



## Sea Grant



### Research

To expand knowledge and answer critical questions



### Extension

To connect science to those who can use it



### Education

To expand environmental literacy and train a coastal workforce



**wrri**  
NC WATER RESOURCES  
RESEARCH INSTITUTE

Similar structure and functions, with focus on NC water resources! (USGS+UNC System)





**I look forward to chatting with you!**

**Christy Perrin**

**Sustainable Waters and Communities Coordinator**

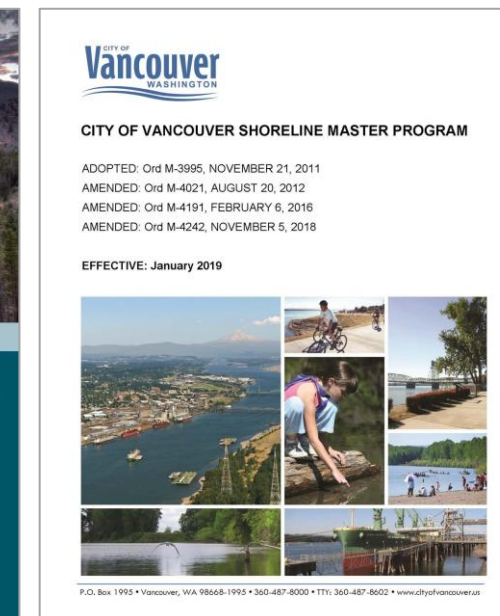
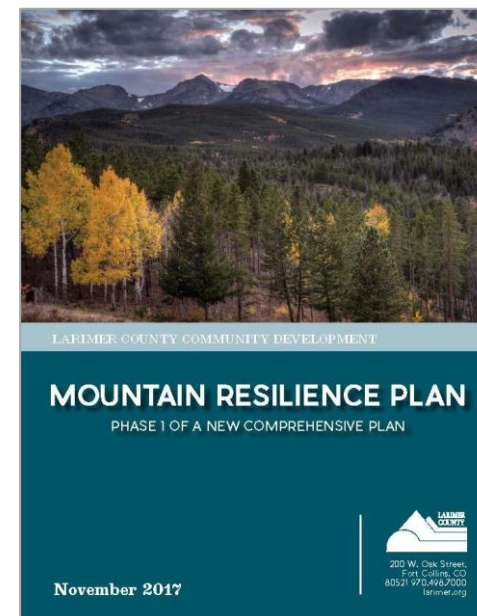
**[Christy\\_perrin@ncsu.edu](mailto:Christy_perrin@ncsu.edu)**





# About Cayla

- B.S. Environmental Studies, FSU (2014)
- MURP, CU Denver (2016)
- Community Planner, Logan Simpson (2016-2019)
- Associate Long Range Planner, City of Vancouver, WA (2019-2021)
- Current—Coastal Planning Specialist, NC Sea Grant







# NC Sea Grant Fellowships and Student Funding Opportunities

- National Marine Fisheries/National Sea Grant Fellowship: January
- John A. Knauss Marine Policy Fellowship: February
- NC STEM Policy Fellowship: March
- NOAA Coastal Management Fellowship: March
- NC Sea Grant/NC Coastal Reserve's Coastal Research Fellowship: April
- NC Sea Grant-NC Space Grant Graduate Research Fellowship: April
- NC Sea Grant/APNEP: November
- Coastal Resilience Team Competition: November
- Mountains to Sea Graduate Fellowship: December



# NC Sea Grant Fellowships and Student Funding Opportunities



Now open for graduate students:  
NC Sea Grant – NC Space Grant  
Graduate Research Fellowship (closes  
April 18)



The background features a large, irregular blue shape on the left and a large, irregular black shape on the right. In the top-left corner, there are blue brushstrokes and a cluster of black dots. In the bottom-right corner, there is a blue spiral graphic and another cluster of black dots.

SNACK OR BIO BREAK

**WE'LL RESTART AT 2:00 PM**



# BREAKOUT TIME!



Breakouts will begin shortly.  
You will stay in the same  
group & *presenters* will rotate.





# Panel 2: Coastal Careers, Contd. & Higher Education Opportunities



RILEY LEWIS

Coastal Carolina Riverwatch  
Outreach & Educational Careers



DR. WILL FERRIS

Duke University - RESILE/CIRCAD  
Developing Resilient Communities - Graduate Programs in Coastal &  
Environmental & Economic  
Considerations



DR. JENNIFER BIDDLE

UNCW  
Graduate Programs in Coastal &  
Ocean Policy



DAVID CERINO

Carteret Community College  
Careers in Aquaculture





# Developing Resilient Communities: Environmental and Economic Considerations

April 9, 2025, as presented to  
The Coastal Society's MAD Coastal Careers  
Workshop

William N. Ferris, Ph.D.  
Executive Director, Duke RESILE & CIRCAD;  
Economic Modeler, NC EcoTech





**Who had a rock tumbler as a kid?**





**Who had a coin sorter bank as a kid?**





**Who likes oysters?**





**What do you get when you combine a rock tumbler, a coin sorter, and an oyster?**



# An Oyster Tumbler/Sorter!

Image courtesy of Ellis L. Chapman, Jr., M.S., of  
the Harte Research Institute of Gulf of Mexico  
Studies Oyster Resource and Recovery Center.







**The Future of the Coastal Economy is  
Technology!**







# How does Ecosystem-Inspired Technology Fuel Resilience?

- **Environmental Resilience**
  - Protect sensitive ecosystems from anthropogenic impacts.
  - Support more sustainable fisheries and resource use.
- **Economic Resilience**
  - More jobs and higher-paying jobs.
  - A stronger tax base for infrastructure and community programs.
- **Disaster Resilience**
  - Stronger homes and communities.
  - Fuel CBCIs to solve insurance problems.





# **I Evaluate the Economic Impact of EcoTech to Maximize Community ROI.**

- Technology's economic activity has direct, indirect, and induced effects on the economy.
- What can we do to maximize the 'bang for the buck'?



# **Crash Course in Economic Impact Analysis**

- Direct Effects
- Indirect Effects
- Induced Effects





\$10,000,000.00	\$4,720,172.89	\$3,103,399.72	Representative; do not cite.
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# Job Creation from \$10M Solar Farm

Occupation	Jobs Supported	Total Wages
Construction Trades Workers	2.83	\$173,597.25
Business Operations Specialists	2.13	\$220,898.87
Material Moving Workers	1.58	\$58,772.63
Food and Beverage Serving Workers	1.52	\$30,436.60
Retail Sales Workers	1.49	\$39,463.81
Engineers	1.39	\$177,396.34
Other Installation, Maintenance, and Repair Occupations	1.36	\$103,357.45

Representative; do not cite.





# How did I get here?

- **Education:** B.A. in Economics; Ph.D. in Economics, with focuses on environmental and development topics.
- **Research:** Water quality policy and implications of ‘clean’ agriculture for nitrogen and phosphorus reduction in the Chesapeake Bay; rural health interventions.
- **Work Experience:** Municipal economic development; ‘pracademic’ economic development consulting focused on rural, resource, and agricultural topics.



# Top Career Recommendations, Personal and Crowd-sourced

- Be able to explain the ‘why’!
- Get comfortable pitching ideas to hot, cold, and neutral audiences.
- Start early, on personal branding and relationship building.
- On the job, connect with what drives you, and bring that to discussions.
- Does your time translate to your goal?
- Trust your gut!





# How to find an internship!

- Be bold and be confident.
- Work with what you have and who you know.
- Connections and personalized outreach are more productive than applications.



# Reach out any time!



Email: [wnf@duke.edu](mailto:wnf@duke.edu)

LinkedIn: <https://www.linkedin.com/in/ferrwil16/>





# References and Acknowledgements

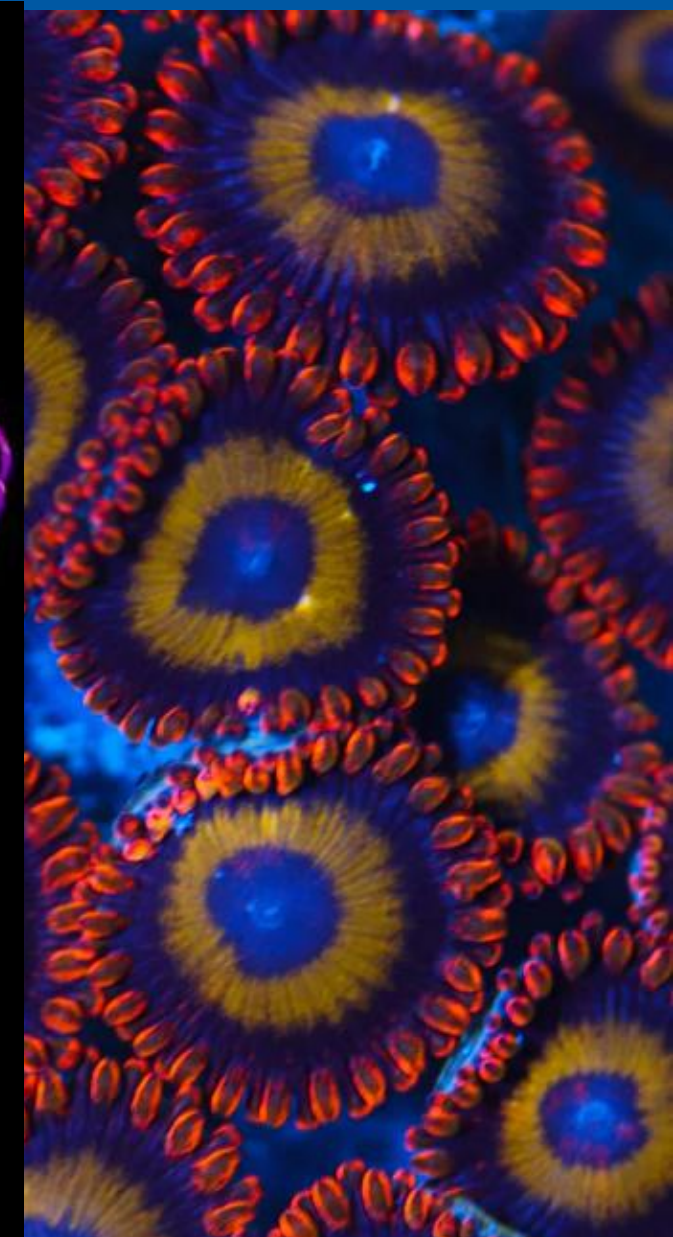
Image courtesy of Ellis L. Chapman, Jr., of the Harte Research Institute of Gulf of Mexico Studies Oyster Resource and Recovery Center. Shared January 15, 2025. Reproduced with permission.

Talk adapted, in part, from “Targeting Workforce Development for Resilient Economic Impact: Studies in Aquaculture” and “Topics in Economic Development,” as presented in Spring 2025 to Duke Research On Tap and to Duke Design Climate.



# Aquaculture Career Opportunities

## David Cerino





# What is Aquaculture?



... Growing stuff in water

# Aquaculture can produce marine organisms for a variety of uses

- **Sustainable, healthy food supply**
- **Pets**
- **Enhancement and restoration**
- **Public Aquariums**
- **Biotechnology**
- **Specialty products**



# Aquaculture Production **Highlights, 2018\***

## Marine and Freshwater National Totals

### VALUE

**\$1.5**  
billion\*\*

+1.8% from 2017

MARINE  
\$430 million

FRESHWATER  
\$719 million

**21%**  
of U.S. seafood  
production & fishery  
products by value

### PRODUCTION

**680**  
million pounds

+7.8% from 2017

MARINE  
97 million  
pounds

FRESHWATER  
583 million  
pounds

**17<sup>th</sup>**  
in global  
aquaculture  
production

## Marine Species Totals

### OYSTERS

**\$219 million**  
45 million pounds

### CLAMS

**\$122 million**  
11 million pounds

### SALMON\*\*\*

**\$66 million**  
36 million pounds

### MUSSELS

**\$9 million**  
0.9 million pounds

### SHRIMP

**\$13 million**  
4 million pounds

## Regional Marine Totals

PACIFIC\*\*\*\*  
**36%**  
of value

ATLANTIC  
**41%**  
of value

GULF OF MEXICO  
**23%**  
of value

\* Data are from state agencies, industry groups, and the United States Department of Agriculture (USDA). Global data are from the FAO.  
\*\* Figure includes value of misc. aquaculture items (e.g. ornamental fish, algae, etc.). Marine and freshwater values will not add to \$1.5 billion.  
\*\*\* Estimated  
\*\*\*\* Alaska and Hawaii are included in the Pacific region for aquaculture production.



U.S. seafood  
trade deficit

\$20.3 billion  
(2023)

Our largest Natural  
Resource  
Deficit

# My Philosophy

- Exposure to everything
- Follow the interests of the students
- Do it!





# Students we serve:

Mix of younger students and second career seekers:

Shellfish growers

Office workers

Fish Cutter

Commercial Fishermen

restaurant/retail workers

★ **US Military** Veterans ★





# Industries that employ graduates

- Shellfish Farms
- Hatcheries
- Commercial fish farms
- Ornamental producers
- Public Aquariums
- Research Laboratories

\*\*\*\*Entrepreneurship opportunities





# Shellfish Aquaculture



Hard Clams



NC has Oyster Fever!



# Macroalgae – seaweeds



Kelp



Sargassum



# NC Shellfish Farming Academy



## Corporate and Community Education



8 Week training program





# NC Shellfish Farming Academy

- Workforce and Community Education Division
- Hybrid Classroom Sessions on Tuesday evenings
- Hands-on field days every other Saturday
- 48 contact hours
- Meant to accommodate people already working in other fields





# Foodfish Aquaculture



Striped Bass



Ponds

**AQUACULTURE FIRM TO GROW STRIPED BASS IN OFFSHORE CAGES**  
MARCH 22, 2018



RAS



# Ornamentals

## Pet trade and Public Aquariums



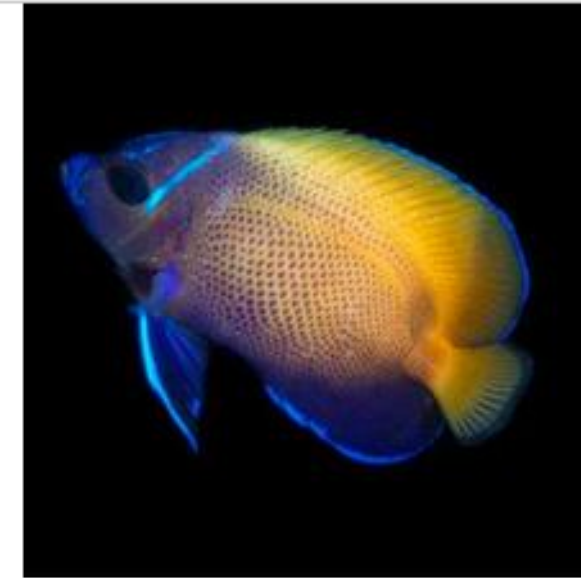
Hawaiian Yellow Tang  
\$149.00



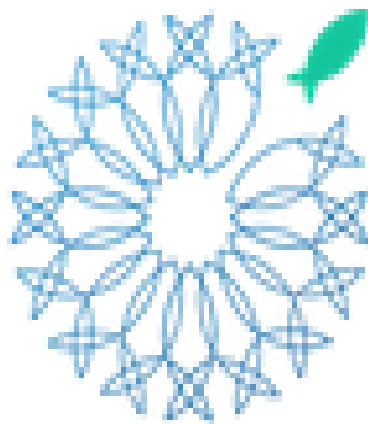
Blue Mandarin Fish Pair  
\$209.00



White Polyp Toadstool SM  
\$60.00



Majestic Angelfish  
\$280.00



biota



Orange Storm Clownfish  
\$145.00



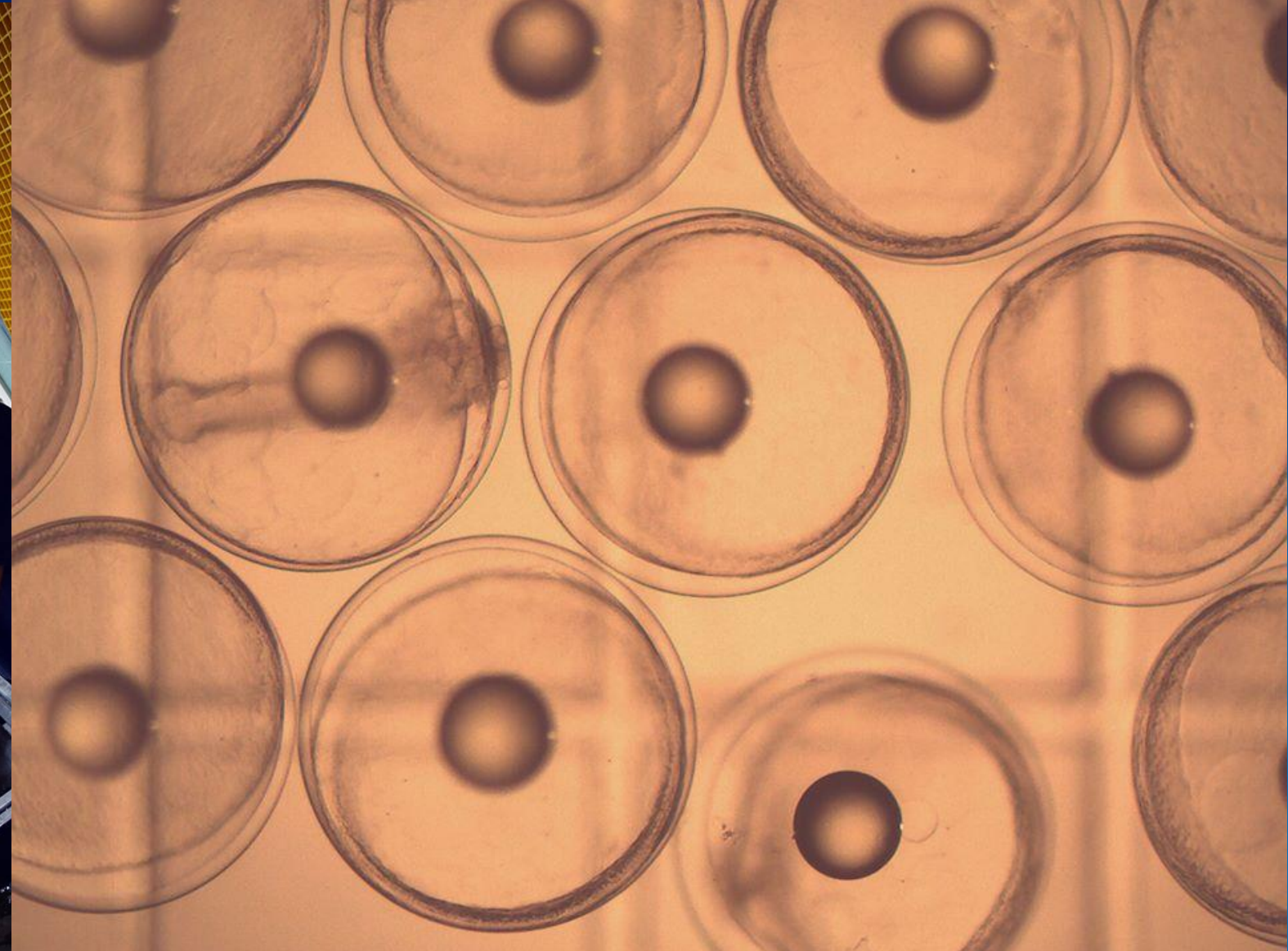
Australian Flathead Perch  
\$1,000.00



Labyrinth Angelfish  
\$550.00



# Public aquariums





# Biotechnology



Zebrafish



Horseshoe crabs





# Restoration

## Oysters



## Sportfish



## Marsh and dune grass

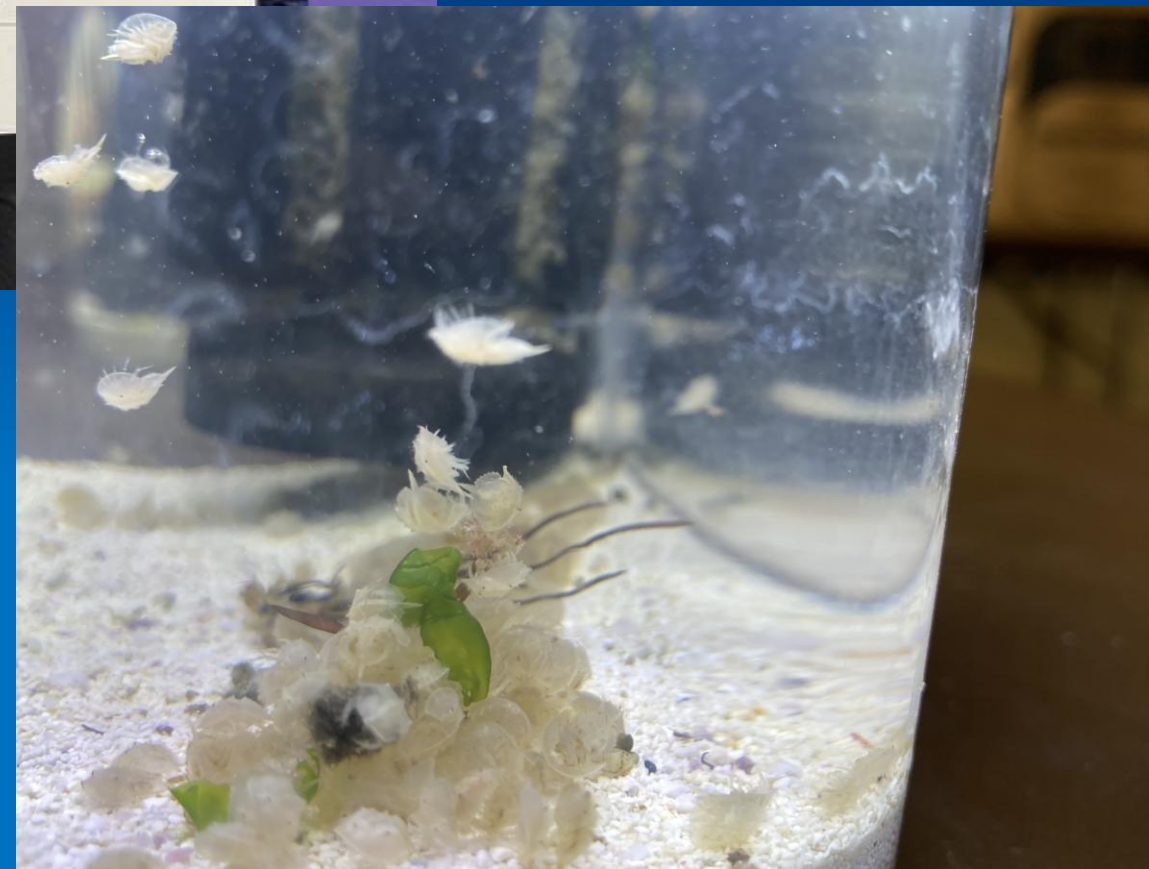


## Corals





# Biotechnology



Horseshoe crab  
Rearing and nutrition





# Biotechnology

## Microalgae

- Fuels
- Foods
- Extracts





# Live Feeds



**ALGAGEN  
PODS™**

**CORAL  
SMOOTHIE**

**Phyco  
Pure™**





# Specialty products

Doctorfish  
Spa and Dermatology



Mosquitofish –  
natural insect control





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# Additional Networking



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THE COASTAL SOCIETY





Keep in Touch!



THE COASTAL SOCIETY

WEB

[thecoastalsociety.org](http://thecoastalsociety.org)

EMAIL

[admin@thecoastalsociety.org](mailto:admin@thecoastalsociety.org)

SOCIAL MEDIA

Facebook: @TheCoastalSociety

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