Gupta College of Science

Wrap-Up Meeting
AY2023-2024

April 26, 2024

Dr. Chad L. Leverette, Dean

@CoastalISTEM
Research Fellows Program

- Premier undergraduate research award
  - One-on-one faculty mentored, yearlong project
  - Cutting-edge research
  - $2500 awarded per Fellow (salary, supplies, travel)
  - Works with faculty from idea generation to presentation
  - Guaranteed two professional presentations at conclusion of project
- 16 Research Fellows AY2023-2024
Eric Cha  
Marine Science  
Utilization of Relative Condition Index (Kn) of White Shrimp for Habitat Assessments in Winyah Bay, SC  
*Research Mentor: Dr. Ryan Rezek*

I will graduate from CCU in May 2025. Upon graduation, I plan to work as a fisheries observer and eventually enroll in graduate school.
Catherine Friedline
Marine Science
Weight-length relationships for common fish and invertebrate species in Winyah Bay, South Carolina
Research Mentor: Dr. Ryan Rezek

Catherine will graduate in December 2024 with a degree in Marine Science and minor in Applied Mathematics. After graduation, Catherine intends on working in the field as a fisheries technician before going back for graduate school.
Kali Goldman
Psychology Major
A Test of the Retrieval-Based Interference Account of the Verbal Overshadowing Effect
Research Mentor: Dr. Melissa A. Baker

Kali will graduate May 4, 2024. She plans to enter a career to gain experience in the field of psychology and pursue a graduate degree program.
Kathryn Hanson
Marine Science

HAB Cyanobacteria in Northeastern SC Retention Ponds: Time trends in abundance and relationship to water quality

Research Mentors: Dr. Susan Libes and Victoria Green

Kathryn will graduate in spring 2025 with a Marine Science major, Biology minor, and Honors Thesis.

She has been working with plankton since her sophomore year at CCU and plans to attend graduate school for marine science or biology to continue performing research.
PEYTON KINAVEY

Major: Honors Biology
Minors: Business Administration and Chemistry
Research Project: Uncovering the Covert: Using eDNA to Detect Eastern Pine Snakes in Horry County, SC
Research Mentors: Drs. Michelle Barthet and Scott Parker

Peyton will graduate in May 2025 and is planning on pursuing a career in veterinary medicine. She wants to specialize in exotic medicine and is currently the president of the Pre-Vet Club, a veterinary assistant to an equine veterinarian, and has been an active participant in the Dalton & Linda Floyd Family Mentoring Program for three years.
Samantha Leo
Psychology
The Impact of Facial Configuration and Description Tasks on Eyewitness Identification Accuracy
Research mentor: Dr. Melissa A. Baker

Samantha will graduate in May 2024. Upon graduation Samantha plans to attend graduate school at Florida International University in their Legal Psychology PhD program.
Sarah McCready
Marine Science
Drivers of the Formation of Sandy Shore Intertidal Biofilms
Research Mentor: Dr. Angelos Hannides

Sarah will graduate in May, 2024. Upon graduation Sarah plans to attend graduate school at Stony Brook University.
Isabel Myers
Biochemistry
Extracellular Vesicle Isolation and Imaging of Streptococcal Bacteria
Research Mentor: Dr. Brian Lee

Isabel Myers will graduate in May, 2024. Upon graduation Isabel plans to work as a dental assistant. She then plans to attend dental school at the Medical University of South Carolina in Charleston.
Kirsten Presnell
Biology - Cellular, Molecular Biology, and Genetics Concentration
Two-Hybrid Assay of Chloroplast Protein MatK and Nuclear-Encoded Proteins

Research Mentor: Dr. Michelle M. Barthet

Kirsten graduated in December of 2023 and is preparing to apply to medical school during this upcoming cycle. During her time at CCU, she worked in Dr. Barthet's lab as the lead investigator on the two-hybrid assay project and acted as a mentor to other undergraduates during this time.

Kirsten presented her work at CCU's UGR Competition in 2023 and at The Association of Southeastern Biologists 2024 annual conference in Chattanooga, TN.

Kirsten would like to thank Dr. Barthet for her continued support, guidance, and mentorship. She would also like to thank the Gupta College of Science for this fellowship opportunity.
Megan Quinn
Marine Science
Behavioral responses of mummichogs (*Fundulus heteroclitus*) to visual and chemical cues from predators and distressed conspecifics

*Research Mentor: Dr. Eric Rosch*

Megan will graduate in December of 2024. After graduation Megan plans to take a semester off to work and then attend graduate school in the Fall of 2025 to pursue graduate studies to eventually begin a career in coral reef conservation. Megan would like to thank Dr. Rosch for his countless support during all the project planning and this fellowship.
Ella Swantek
Marine Science Major
Effects of Urbanization on Eutrophication Risk
Research Mentor: Dr. Angelos Hannides

Ella Swantek will graduate in May of 2025. Upon graduation, she plans to spend some time working in the marine science field before pursuing higher education and a career in research and conservation.
Jeremiah White will graduate in May 2024. Upon graduation, Jeremiah plans to enter the workforce as a data scientist.
Kayleigh Wolstenholme
Marine Science
Ontogenetic changes in the trophic levels of White and Brown shrimp in the Winyah Bay Estuary, SC
Research Mentor: Dr. Ryan Rezek

Kayleigh will graduate in May 2026 with a degree in Marine Science and minor in Women’s and Gender Studies. After graduation Kayleigh intends to continue research in graduate school.
Congratulations!
Research Fellows 23-24
24/FA Freshmen applications are up 17.3% (3,075) over same time last year
24/FA Freshmen acceptances are up 12.5% (1,737) over same time last year
24/FA Freshmen deposits are down 7.5% (-133) over same time last year

24/FA Transfer applications are down 2.2% (-30) over same time last year
24/FA Transfer acceptances are up 4.6% (25) over same time last year
24/FA Transfer deposits are up 19.7% (37) over same time last year

* FAFSA was biggest challenge...but
* On April 25, FAS shared they had sent out around 6,200 award packages – yield is typically ~20-30%
Fall 2024 Enrollment

Up +9.1% in continuing UG

Data is as of April 24, 2024.

COASTAL CAROLINA UNIVERSITY
First-time, Full-time Spring and Fall Retention

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<thead>
<tr>
<th></th>
<th>Fall 2014</th>
<th>Fall 2015</th>
<th>Fall 2016</th>
<th>Fall 2017</th>
<th>Fall 2018</th>
<th>Fall 2019</th>
<th>Fall 2020</th>
<th>Fall 2021</th>
<th>Fall 2022</th>
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<td>N = 2,374</td>
<td>N = 2,359</td>
<td>N = 2,346</td>
<td>N = 2,381</td>
<td>N = 2,313</td>
<td>N = 2,043</td>
<td>N = 2,511</td>
<td>N = 2,653</td>
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<td>Fall to Fall</td>
<td>86.6%</td>
<td>88.1%</td>
<td>88.5%</td>
<td>88.7%</td>
<td>89.0%</td>
<td>89.3%</td>
<td>89.5%</td>
<td>89.8%</td>
<td>90.0%</td>
<td>91.6%</td>
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<td>Fall to Spring</td>
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<td>80.8%</td>
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COASTAL CAROLINA UNIVERSITY
Gupta College of Science

• Dept. of Biology
• Dept. of Chemistry
• Dept. of Computing Sciences
• Dept. of Marine Science
• Dept. of Mathematics and Statistics
• Dept. of Physics and Engineering Science
• Dept. of Psychology

• Burroughs and Chapin Center for Marine and Wetland Studies
  • Environmental Quality Laboratory
  • Waccamaw Watershed Academy

171 FT faculty/staff, 40 PT faculty

All Students in GCOS
• 2,821 UG and GRAD
• 26.4% of all CCU students are in GCOS

Total Credit Hours taught
• 83,492 student credit hours (UG and Grad)
• 28% of all credit hours for CCU
College Objectives
• Set work for year – 2nd year of this proactive approach
• Based on general attributes we value and attributes of healthy, strong colleges
• Objectives posted on GCOS Faculty/Staff Resources page

2023-2024 - 32 total objectives identified - 15 completed (47%), 11 worked on (34%) – 81%

*Summary Report will be provided to College through Teams in May 2024
Vision and Strategic Plan – STEM Reach 2030

Committee Members

- Dr. Scott Parker – Biology
- Ms. Candy Butler (Staff) – Biology
- Dr. Brett Simpson – Chemistry
- Dr. Crystal Cox – Computing Sciences
- Dr. Diane Fribance – Marine Science
- Dr. Eric Rosch (NTT) – Marine Science
- Dr. Lindsey Bell – Mathematics and Statistics
- Dr. Siming Guo – Physics and Engineering Science
- Dr. Matthew Murphy – Psychology
- Dr. Chad Leverette – Dean

Will be sent out next week!!
We empower each student to be the scientists and engineers of tomorrow through a premier and experience-driven STEM education with a big-university impact and a small-university feel.
Strategic Pillar #1
Premier STEM Education...providing a first-class STEM education from a public, comprehensive institution

Ensuring student success and career readiness through the highest quality STEM education possible

**Strategic Goals:** High Quality Academic Programs; Innovative Teaching based on Teacher-Scholar Model; State-of-the-art equipment, instrumentation, and marine vessels; Transferable skills and career preparation; Student success – RPG Initiatives and Advisement; Distinctive graduate programs

Strategic Pillar #2
Experience-Driven Approach...fully maximizing the high-impact practices of experiential learning for our students

Preparing students through hands-on, personalized, real-world experiences while creating deep belonging and identity in STEM

**Strategic Goals:** Wide variety of experiential learning opportunities; Undergraduate and Graduate Research
Strategic Pillar #3

Big University Impact...making a meaningful and sustainable difference through science locally and globally

Reaching “big university” outcomes that lead to a lasting legacy and reputation of excellence

**Strategic Goals:** Community connections and external partnerships; On-the-water locations; Scientific outcomes, Sustainability initiatives; Growing our brand – strategic marketing

Strategic Pillar #4

Small University Feel...a friendly, collaborative, and collegial environment

Maintaining and nurturing the close relationships that exist between our faculty, staff, and students and ensuring a College culture where each person is valued and respected

**Strategic Goals:** Close community of faculty and staff; Supporting our people; Connection with students
Foundations...the basis for a strong, efficient, and effective College

The approach, infrastructure, and processes that support faculty governance and good stewardship of resources that enable the College to work efficiently and effectively to achieve its vision and mission.

**Strategic Goals:** Operational infrastructure and processes; Comprehensive communication plan; Managing and growing financial and physical space resources
Dr. April Abbott
(Marine Science)
Expedition – Antarctica

“Reach” - International
“Reach” - International

Dr. Till Hanebuth (Marine Science)
Expedition – Bay of Bengal

Team from Germany, US, France, New Zealand, Bangladesh, Sri Lanka, Pakistan
Disrupting purine de novo biosynthesis to fight cancer - from molecules to cells to in vivo studies

Horizon Program, European Commission, Marie Sklodowska-Curie Actions, Staff Exchange (D. Witkowska, Coordinator, University of Opole, Poland), N. Sewald (Partner, Universitaet Bielefeld, Germany), G. Roviello (Partner, Consiglio Nazionale delle Ricerche, Napoli, Italy), H. Simonyan (Partner, Yerevan State U., Armenia), C. Gamberi (Partner, Coastal Carolina U., USA), J. Holien (Partner, RMIT STEM College, Australia).

Role: Partner. Submitted.
College Communication – One College Approach

- Share on a variety of platforms (Teams, email, social media, web)
- Teams posts – AY2023-2024 = **158 (23% increase this year)**
- College Recap email – 9 for year, 15th of each month
- College Calendar (Fall and Spring)
- Summary reports and meeting recordings
- 5 social media platforms total
  - Followers (May 2024)
    - X - 201 followers
    - X (Dean’s) – 698 followers
    - Instagram – 2,084 followers
    - Facebook – 406 followers
    - Linkedin - 650 followers

@coastalstem
Progression – flipbook, distribution (BOT, peer and aspirants, donors, alums)
  • Rack cards being sent to 115 peer and aspirant institutions
MarComm – marketing materials – brochures, new materials, new graphics
  • New College brochure – new materials coming in AY2024-2025
Vision/Mission/Strategic Plan – this summer
Digital Marking Campaign – This May thru summer – 1st time ever for College – recruitment campaign Fall 2024
New efforts – boat branding
  • Myrtle Beach Classic – PGA event
College Communication – One College Approach

• “One College” events
  • Science Scoop
  • Faculty/Staff Appreciation – Baseball game
  • Two Town Halls (Fall and Spring)
  • Coffee and Conversations
  • Douglas Hall dedication
“One College” events
  - New Faculty/Staff Reception
  - NTT Faculty Reception
  - Fall Fest
Excellent Teaching, Student Success, Supporting the Teacher-Scholar Model

- **Current curriculum**
  - Joint interdisciplinary B.A. degree in Cyber Threat Intelligence
  - Launch/development of MCES degree and degrees in biology/physics/math/chemistry education
  - HGTC 2+2 Engineering – working on this
  - Ripley’s Aquarium – Myrtle Beach – Advanced Internship – MSCI
  - “Conversations along the Coast” – environmental law continuing education course
  - Hydrographic/Geospatial training course
    - June 2024 at CCU
  - Curricular revisions/additions across College = 89
Experiential Learning – So many wonderful things!
- Active learning in the classroom, lab, field, ocean
- Research
- Internships
- Capstones
• Experiential Learning – So many wonderful things!
  • Active learning in the classroom, lab, field, ocean
  • Research
  • Internships
  • Capstones
Excellent Teaching, Student Success, Supporting the Teacher-Scholar Model

- Experiential Learning – **ChantSat 1**
  - Interdisciplinary faculty teams
  - Student-centered experiential learning

**CCU launches South Carolina’s first space satellite program**

February 28, 2024

Coastal Carolina University announces the launch of the CCU Space Program, the first such endeavor in South Carolina. The program, which will feature the ChantSat-1 CubeSat, emphasizes a student-centered approach.
Disease Modeling Research Center (DMRC)

- **Goals:**
  - Decipher molecular underpinnings of disease and develop effective therapeutic intervention with minimal side effects
  - Train highly qualified personnel

- **Interdisciplinary disease mechanism research at CCU**
- **Studying model organisms**
  - Drs. Gamberi, Lin, and Williams (Dept. of Biology)

- **Microbiology**
  - Dr. Cevasco (Dept. of Biology)

- **Medicinal Chemistry**
  - Dr. Wakefield (Dept. of Chemistry)

- **Structural biology and biochemistry**
  - Dr. Lee, Perez-Alvarado, Richardson (Dept. of Chemistry)

- **Public health policy**
  - Dr. McGough - CMC College, Dept. of Health Sciences
• SC IDeA Network of Biomedical Research Excellence
  • Network of 18 institutions
    • 3 R1, 11 PUI
    • 4 outreach/alumni PUIs
  • Current award: $18,926,653
    • National Institutes of Health (NIH) - 2020-2025
    • Began in 2001
  • CCU – started in 2015
    • $491,000 2015-2020
    • $424,000 for 2020-2024
  • PI lead: Dr. Bryan Wakefield
    (Dept. of Chemistry)

https://sites.google.com/view/scinbre/home
State/Federal partnerships – NIH – SC INBRE

- Additional funding to CCU:
  - DRP – 3 faculty
    - $300,000
  - Seed grants that will lead to more NIH funding
    - $50,000 Thunderscope
    - $75,000 tissue processor and cryostat
- CCU research outcomes:
  - 286 students participated
  - 29 peer-reviewed papers published
  - 33 grants submitted
  - 167 presentations

https://sites.google.com/view/scinbre/home

- Bioinformatics Pilot Project Program (BIPP)
- Developmental Research Project Program (DRP)
- Student-Initiated Research Project Program (SIRP)
- Data Analytics Student-Initiated Training Award (SITA)
SCoRE – SC INBRE Summer Research Experience (SCoRE)
Explore Research – ISS/VIP Initiative

- GCOS invited to be in GA Tech’s VIP program
  - New initiative for us – began Feb. 2024
  - 48 institutions worldwide
  - CCU is only one in SC
- Peer-mentored research teams
  - Students can get involved as freshmen!
  - Leads to belonging and increased retention/graduation
  - Prepares students to be scientists and engineers
  - https://www.coastal.edu/science/vip/
- GA Tech has 80 teams – we started in Feb. with 7 (a high mark for a starting institution)

https://www.vip-consortium.org/
Excellent Teaching, Student Success, Supporting the Teacher-Scholar Model

- **Experiential Learning** – Conferences
  - SC Academy of Science – 32 students/faculty attended
    - 35% and 15% of all poster and oral presentations respectively
  - SC Chapter of American Society of Microbiology
  - Sea Grant Symposium

Sea Grant
S.C. SEA GRANT CONSORTIUM
May 15-16, 2024 at CCU
Excellent Teaching, Student Success, Supporting the Teacher-Scholar Model

- **Student Success – NSF S-STEM**
  - PIs – Dr. Wes Hitt and Dr. Siming Guo (physics and engineering science)
    - Selected for faculty excellence awards for Student Success
- **S-STEM CARES – CCU Engineering Scholarship**
  - Enhanced orientation
  - Summer bridge program
  - Peer and faculty mentoring
  - Early internship opportunities
Excellent Teaching, Student Success, Supporting the Teacher-Scholar Model

- Other initiatives
  - Grad program support
    - Re-tooling MS in Information Systems Technology
  - Stipends, travel, policies
  - Intentional recruitment of students
    - Successsteam
  - Probation/suspension – dropped 25%
    - New Director of Student Success and Persistence
      - Ms. Kayla Jessop-Jacoby
  - On-the-water locations
    - Waties Island
    - Georgetown
Waties Island
- Incredible interest from State
- Gov. wants to conserve 10 million acres
- OSI and Boyce Family meetings
- Meeting with state agencies (i.e., PRT, DNR, OSI)
- GCOS Waties strategy for CCU to steward the island
  - Protection, Education, Research
  - Transformational for us

Other strategic locations along coast:
Georgetown, Murrells Inlet
Professional Development and Support of Faculty and Staff

- Initiatives
  - Engage in National STEM conversations
    - Transforming STEM conference – Nov 2023
  - Thank You Project
  - Faculty load – equitable and allow for increased faculty involvement in experiential learning/scholarship activities
    - Cost neutral
    - Hires – Psychology and Physics and Engineering Science
  - NTT support – Principal Lecturer process and connection among faculty
    - NTT Faculty Reception
  - Support of New Faculty
    - New Faculty Reception
    - Teaching/learning resource
Thank You Project

• Cultivating the habit of being grateful
• 235 submissions received since Sept. 11, 2023
• Recipients
  • Faculty: Eric Rosch, Kevin McWilliams, Michael Vansco, John Hutchens, Megan Cevasco, Ross Foultz
  • Staff: Jennifer Sparkes, Danielle Viso, Kristopher Dobinson, Candy Butler, Brian Wagner, Melanie McKeefery

https://www.coastal.edu/science/thankyouproject/
Professional Development and Support of Faculty and Staff

• Faculty Awards
  • Faculty Excellence and Innovation Awards
    • Student Success
      • Dr. Wes Hitt (physics and engineering science)
      • Dr. Siming Guo (physics and engineering science)
    • Research Award
      • Dr. Will Jones (computing sciences)
  • HTC Distinguished Teacher-Scholar Lecturer Award
    • Dr. Paul Richardson (chemistry)
Critical process areas that are mentioned often – Visioning/Strategic Planning Committee has identified:
- Hiring
- T&C
- Procurement
- Grants support
- Administrative Forms (student forms)

HR Shared Services Model
Continued meetings on T&C and Procurement processes
- Have heard good things from admins and faculty – will continue on this
Continuous improvement mindset – Emily Griffin
Grants accounting meetings taken place
- Helped various faculty on different issues
- Risk accounts, etc.
Revised FAR form and process (*Watermark next year*)
Equipment/Resources, Travel, Donations

- **Equipment/Instrumentation/Vessels**
  - Tech Committee Members working with Depts and Chair
  - Need ongoing lists from departments
  - Tech Committee will share priorities from department lists for submission to campus
  - College Council combined dept. needs with tech committee needs
  - $490,547.68 approved – in budget process
    - Includes NMB boat renovation (with separate private donation)
    - 6 of 8 units in College supported with program fee for student purposes
    - All 8 supported considering all funds dispersed
  - Boat reservation system – improve tracking and aid in utilization (still working on this)

- **Travel** *(all faculty mini-grants and student travel received by deadline were approved)*
  - AY2023-2024 – All proposals received funded - $100,253 (~28% increase)
  - AY2022-2023 – All proposals received funded - $77,817

- **External Funds Raised Through Donations** - $141,000 *(Two Year Total - $2.391 Million)*
State Partnerships - SCRA

- Partnership with SC Commerce
  - Grant - $103,850 FUNDED
  - Purchase EDS attachment
    - Purchase Fall 2023
    - Provides elemental spectrum

- SCRA Track 2 – Biomedical Infrastructure Grant - $639,826
  - Partnership OSPRS and CMC College
  - $287,300 for new biomedical equipment for GCOS

SCRA
South Carolina Research Authority
Facility Support for Research

New College initiatives/efforts (since Summer 2022) to better support Undergraduate and Graduate Research

2. Clarifying and elevating expectations for scholarship for tenure-track faculty across the College
3. Research Equipment Funding – Plan to spend $3.5 million in research equipment by 2030 (50% increase)
4. Salary and Start-up for New Hires – highest ever
5. Discretionary funds for experiential learning from private donations
6. Supporting travel to conferences – 28% increase from 2023 to 2024
   • Looking at regional conferences to increase opportunities for students
7. Full-time Instrument Technician for College
8. Time for faculty for scholarship – Independent Study Support (ISS) Program – VIP

University support:
- Office of Sponsored Programs and Research Services (OSPRS) – pre- and post-awards
- PEG – Performance Enhancement Grants
- Scholarly Reassignment
- Generous IDC policy for researchers – 25% of all IDCs back to PI
- Course buy-out process
Remote work/Flexible schedule Process - Update

- Process approved by BOT and Human Resources to help support staff work/life balance
  - Email went out on Sept. 15, 2023
- Three options available:
  - 1) Remote – one day a week
  - 2) Flex schedule – outside of normal business hours
  - 3) Hybrid – a mix of items 1 and 2 above
- Supported by our College
  - Implementation seems to be going well

*If you have any questions, concerns, or feedback, please contact Dean’s Office*
Personnel: 3rd FT (slotted) boat captain, salary issue with another boat captain, EQL staff support (2), new assoc. chair psychology, 3 new admins

- **Ms. Colleen Meitzler** - Dept. of Math and Statistics
- **Ms. Corinne Bailey** - Dept. of Psychology
- **Ms. Holly Bolk** - Dept. of Biology
Promotion and Tenure – AY2023-2024
• 3 promotion and tenure – Assoc. Professor
• 6 promotion to full professor
• 15 promotion to Principal Lecturer
• 6 promotion to Senior Lecturer
• 6 post-tenure review
• 0 post-promotion
• 4 third year review process
Community Outreach/STEM Awareness

- Teal and Tech Experience
  - 350 8th graders
- STEM Night – Pelicans
  - 100 K-12 students received tickets
- Successsteam
- CCU Soon
- MSCI – ACE Fellow – Dr. Robert Weiss
Community Outreach/STEM Awareness

- Environmental Quality Laboratory
  - Part of BCCMWS
  - Research, Education, Outreach
  - DHEC certified lab – recertified! Congratulations!

Environmental Quality Laboratory

The Environmental Quality Laboratory (EQL) at Coastal Carolina University is a non-profit facility within the Burroughs & Chapin Center for Marine and Wetland Studies (BCCMWS) emphasizing education, research and community service. We are a state-certified analytical chemistry and microbiology laboratory focused on environmental investigations with the South Carolina Department of Health and Environmental Control. (EQL) 4-254, 843-907-1400 or 843-907-5113.
External Partnerships
AY2023-2024

- Industry awareness course
- 57 new contacts
- 40+ businesses and schools toured
- 8 new contacts SC Competes
- 56 additional new contacts
- Strengthened connections LANL, Santee Cooper, SCOR
Thank you for an AWESOME year!
Have a great summer!