



**USCRP**

US COASTAL RESEARCH PROGRAM

**ANNUAL  
REPORT**

**2023**

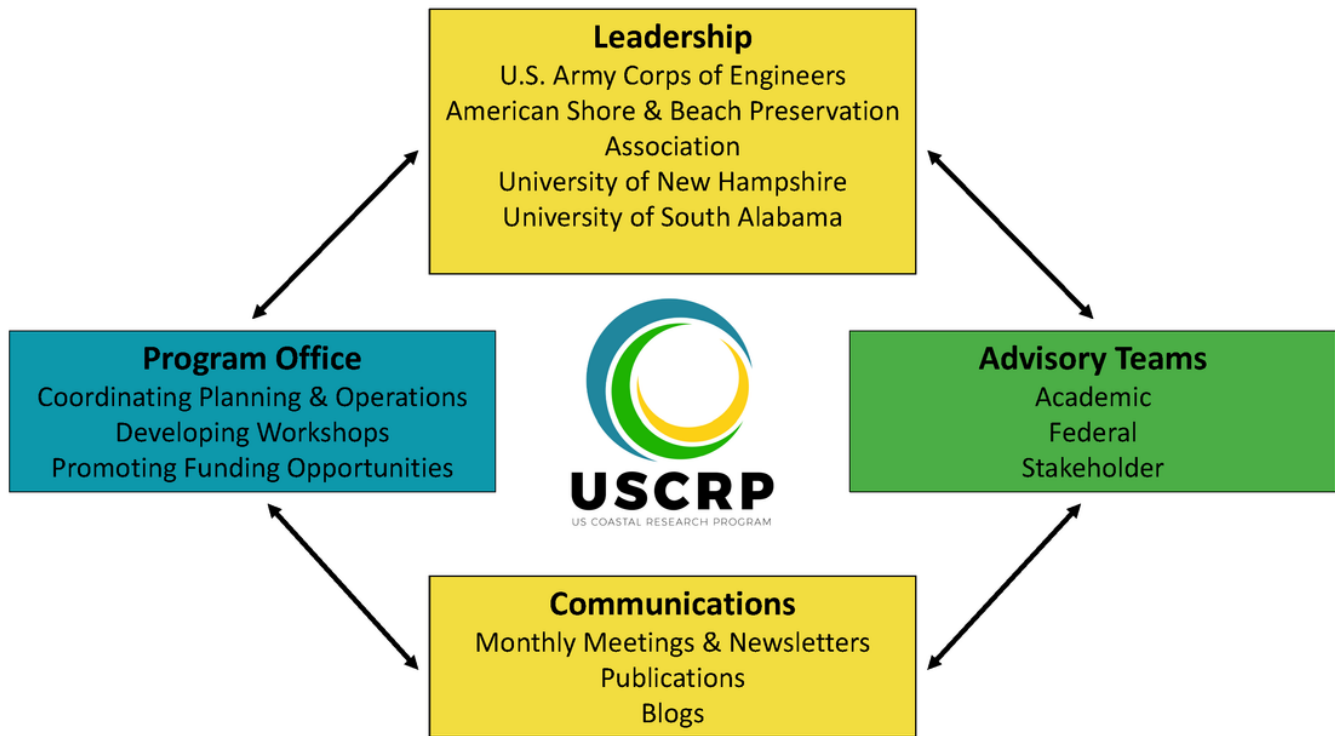
**EDITION**



US Army Corps  
of Engineers®



USGS USA  
science for a changing world



# OUR MISSION

The U.S. Coastal Research Program (USCRP) is a multi-agency led effort to **coordinate** federal activities, **strengthen** academic programs, and **address** coastal community needs by *identifying* coastal research priorities, *enhancing* funding for coastal academic programs, *fostering* collaboration, and *promoting* science translation. USCRP is guided by priorities of coastal leaders in federal agencies, academics, and non-governmental organizations and by the overarching framework and needs as identified in the seminal 2014 Nearshore Research Report (Elko et al. 2015).

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Summary

# LETTER FROM LEADERSHIP

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The start of a new year is an excellent opportunity to reflect on the past and plan for the future. We are grateful for the continued support of our members, the research innovations from our PIs, and the hard work of our staff. Our members are the driving force behind USCRP, making it the first of its kind - a collaborative effort created and led by the coastal community. It is an exciting time to be cooperating, researching, and discussing how we can address the needs of society along the coast.

In 2023, our organization experienced a significant change when Dr. Diane Foster and Dr. Bret Webb joined the executive team. Their inclusion brought years of experience not only in coastal research, but also in teaching, training, and mentoring the next generation of coastal scientists. We successfully supported five new projects under our request for proposals and currently manage 38 projects. Our ORISE Fellow's work allowed us to share research details on the first five years of funded projects in the USCRP Project Database.

As we move forward to 2024, we must look back at 2023 to set the foundation for our decadal visioning workshop next June. This workshop, along with pre-workshop sessions, aims to continue our community-led model by gathering research priorities from federal agencies with coastal missions, societal needs, gaps in fundamental research, and priorities for future investments.

We're thrilled to host you in St. Petersburg to discuss where the community stands currently and where it aims to go in the next ten years.

*Julie Rosati and Nicole Elko*



# ACADEMIC TEAM

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The Academic Team provides direction on academic funding, existing programs, and graduate education. The Team is currently composed of representatives from University of New Hampshire, University of South Alabama, University of North Carolina at Wilmington, and Oregon State University. We took time in 2023 to restructure, share insights on database development, and guide staff on academic funding. We are looking forward to continuing to support the 2024 Decadal Workshop planning and other academic lead activities.

# FEDERAL TEAM

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The Federal Team reports on current agency research activities, mission objectives, and opportunities within each agency. The Federal Team has been meeting to identify agency coastal research priorities ahead of the 2024 workshop. The Team supported the FY 2023 request for proposals review and helped develop the project database. The Federal Team is looking forward to sharing findings at the 2024 workshop, continuing to identify opportunities for collaboration, and connecting with stakeholders and academics.



# PROGRAM MANAGERS

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The USCRP program managers work behind the scenes to facilitate the vision and mission of the program. We hit the ground running in 2023 with a renewed focus on communications and exciting new funding opportunities to process. It has been amazing to hear from all of our projects in monthly meetings and highlight the work being done across the country to address coastal scientific gaps and societal needs. Program Manager top moments in 2023 were sharing the USCRP's impacts in the By the Numbers Campaign and publishing the Dunex Technical Report.


University of South Alabama graduate students (from left to right) Peyton Posey, Sean McQuagge, and Elizabeth Winter recover tide+wave gauges from Dauphin Island following Hurricane Zeta for their FY19 funded project. Photo Credit: Dr. Bret Webb, University of South Alabama.






UNF, FIT, and USA students (and faculty) work to secure an array of lasers as part of PIV experiments in the University of South Alabama's Coastal Hydraulics Lab. Photo Credit: Dr. Bret Webb, University of South Alabama.

# OUR MEMBERS



You, our membership, are what makes the US Coastal Research Program unique. Members from academia, federal agencies, and industry contribute to a coordinated coastal voice, inform future funding, and share your work with us through thematic workshops, visioning sessions, and monthly meetings.



# Membership Report

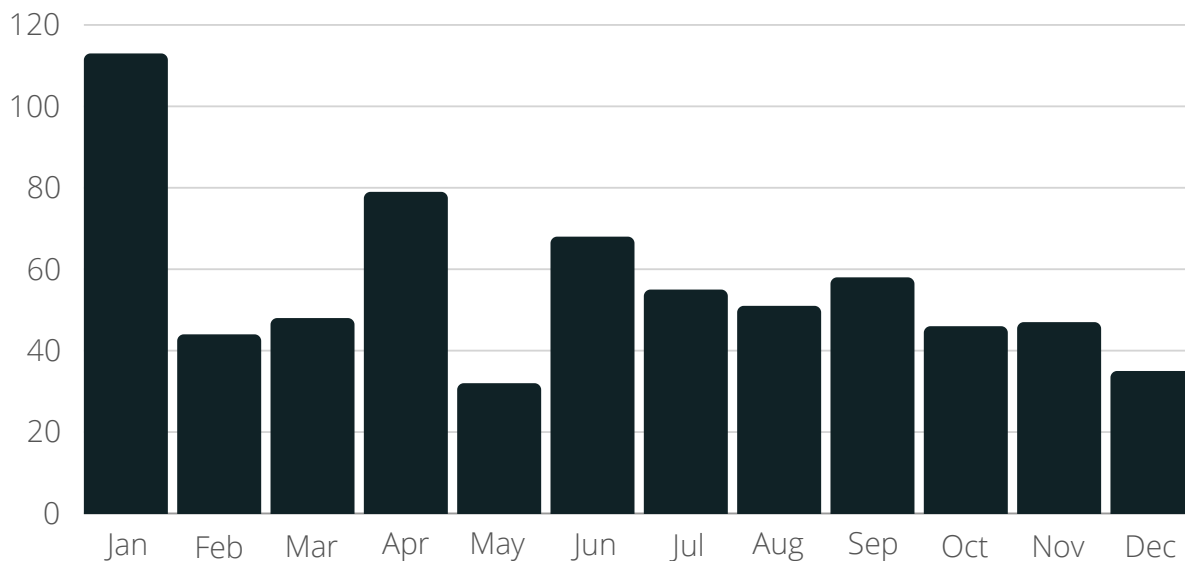
USCRP members make up a diverse community of practice which both created and leads the program through participation at thematic workshops, responding to surveys on needs and challenges, and helping prioritize research focus areas.



USCRP has connected most with:

- Higher Education Professionals
- Those in Entry Level positions
- Organizations with 501-1000 employees

## Meeting Attendance in 2023



Staff worked to increase communications to members in 2023 and saw great engagement at meetings and beyond. January's monthly meeting had record attendance at 113 participants. It was great to hear updates on research projects from around the nation. Do not miss out on a single meeting in 2024 by adding them to your calendar!

*Let's take a look back at our meetings from 2023.*



2023  
MONTHLY MEMBERSHIP MEETINGS  
2:00-3:30 PM ET



JANUARY 3

**Dr. Natalie Nelson** (North Carolina State University) *Towards Real-Time Fecal Indicator Bacteria Monitoring in Coastal Waters*

**Dr. Andrew Ashton** (Woods Hole Oceanographic Institute) *Modeling of Barrier Profile Change*

FEBRUARY 7

**Dr. Casey Godwin** (University of Michigan) *Quantifying the Role of Microcystis Resuspension on HABs in Coastal Lake Erie Using Multidisciplinary Approaches*

**Dr. Kemal Cambazoglu and Dr. Kim DeMutsert** (University of Southern Mississippi) *Using a coupled modeling framework to evaluate how freshwater and nutrient input from Bonnet Carré spillway openings affects water quality, phytoplankton blooms, food webs, and fisheries in the Mississippi Sound and Bight*

**Dr. Alberto Canestrelli** (University of Florida) *Identification of sources of fecal pollution in populated estuaries by a combination of monitoring and numerical modeling*

MARCH 7

**Dr. Reza Marsooli** (Stevens Institute of Technology) *Benefits of Vegetation for Preventing Coastal Flooding Induced by Failure of Seawalls*

**Dr. Meagan Wengrove** (Oregon State University) *Oregon Coastal Dune Management – Physical Mechanics and Community Perception*

APRIL 4

**Dr. Thomas Wahl** (University of Central Florida) *When forces collide: Developing a scalable framework for compound flood risk assessment*

**Dr. Bret Webb** (University of South Alabama) *Barrier Island hydrodynamics and morphodynamics during an extreme event*

**Dr. Peter Traykovski** (Woods Hole Oceanographic Institute) *Mapping Nearshore Bathymetric Change with Surf-Zone Capable Unmanned Surface Vessels*

MAY 2

**Dr. Jim Chen** (Northeastern University) *Coupling CSHORE and Aeolis/Duna to Model Co-Evolution of Nearshore-Beach-Dune Systems: Caminada Headlands, Louisiana and Duck, North Carolina*

**Dr. Cindy Palinkas** (University of Maryland) *Assessing Shoreline Erosion and Sediment Deposition as Contrasting Influences on the Sustainability of Natural Marshes and Living Shorelines*

**Dr. Bret Webb** (University of South Alabama) *Systems Engineering Approaches for Resilience to Coastal Hazards*

JUNE 6

**Dr. Tiffany Roberts Briggs** (Florida Atlantic University) *Natural and Anthropogenic Influences on National Beach Nourishment Activities and the Impact on Regional Sediment Budgets*

**Dr. Jim Thomson** (University of Washington) *Coherent drifter arrays during DUNEX*

**Dr. Giulio Mariotti** (Louisiana State University) *Bridging the gap between process-based marsh evolution models and data-driven metrics of marsh health*

2023  
MONTHLY MEMBERSHIP MEETINGS  
2:00-3:30 PM ET



JULY 11

**Dr. Antonio Rodriguez** (University of North Carolina at Chapel Hill)

*Investigating oyster-reef morphodynamics to optimize nature-based infrastructure*

**Dr. Jon Miller** (Stevens Institute of Technology) *Evaluating the Influence of Water Level on Wave Attenuation of Natural and Nature Based Features in Low-High Energy Environments*

**Dr. Karl Kaiser** (Texas A&M University at Galveston) *Microplastics(R)us: Sources and transport pathways of microplastics in a coastal estuary*

AUGUST 1

**Dr. Thomas Lippmann** (University of New Hampshire) *Biophysical Drivers of Sedimentation in Salt Marsh Environments with Implications for Coastal Resiliency*

**Dr. Greg Wilson** (Oregon State University) *Data-driven uncertainty reduction during nearshore events*

**Dr. Greg Wilson** (Oregon State University) *Innovations in acoustic remote sensing of sediment transport for improving short-to long-term models*

SEPTEMBER 5

**Dr. Rachel Gittman** (East Carolina University) *Evaluating the coastal protection and ecological co-benefits of novel marsh-oyster restoration approaches*

**Dr. Britt Raubenheimer** (Woods Hole Oceanographic Institute) *Mechanisms for Dune Failure During Wave Impacts (DUNEX)*

**Dr. Mara Orescanin and Dr. Liliana Velasquez Montoya** (Naval Post Graduate School, US Naval Academy) *Long term morphodynamic stability at a bar-built estuary with implications for breach management*

OCTOBER 3

**Dr. Kevin Befus** (University of Arkansas) *Long-term feedbacks in levels: Trajectories of groundwater, surface water, and land elevations in managed settings with sea-level rise*

**Dr. Jennifer Irish** (Virginia Tech) *Impact of Coastal Restoration on Barrier-Island Evolution and Future Flooding*

**Dr. Hannah Sirianni** (East Carolina University) *Estuarine Bluff Shoreline: Inter-relation between erosion processes and development vulnerability*

NOVEMBER 7

**Dr. Joe Long** (University of North Carolina Wilmington) *Beach Berms: The missing link to predicting decadal-scale barrier island evolution?*

**Dr. Diane Foster** (University of New Hampshire) *Observations of Sediment Overwash into Salt Marsh Environments with Implications for Coastal Resiliency in Colder Climates*

**Dr. Hussain Abdulla** (Texas A&M University-Corpus Christi) *Microplastic presence and circulation in Galveston, Corpus Christi, and Matagorda Bays*

DECEMBER 5

**Dr. Amanda Spivak** (University of Georgia) *Hydrological management of a tidally restricted coastal wetland: Characterizing biogeochemical responses over multiple time scales*

**Dr. Steve Elgar** (Woods Hole Oceanographic Institute) *Processes That Cause Long-term Nearshore Morphological Evolution*



The 10-foot flume at the U.S. Army Engineer Research and Development Center Coastal and Hydraulics Laboratory facility.

## 2023 FUNDING

In fiscal year 2023 (FY23), the USCRP provided over \$5M for competitive academic proposals addressing the ability to collaboratively predict sediment transport processes and morphologic response to coastal processes under highly controlled conditions at the U.S. Army Engineer Research and Development Center (ERDC) Coastal and Hydraulics (CHL) laboratory facility. These academic proposals included funding for graduate students to help build their expertise in coastal research and develop the next generation of leaders.

# 2023 Funding

# 5M\$

The USCRP sought academic proposals that aligned with or supported federal research priorities in sediment transport processes to address critical research needs within the coastal community and advance the state of knowledge of coastal science.

Proposals are encouraged to address one or more of the USCRP objectives:

- Understanding fundamental processes of sediment transport
  - Understanding fluid-sediment dynamics in nearshore environments
- Improving numerical modeling of sediment transport
  - Furthering the development of existing numerical models by incorporating novel or better physics formulations derived from laboratory tests
  - Identifying and prioritizing parameters that cause uncertainty in numerical modeling of sediment transport processes
- Improving instrumentation and advances in experimental techniques
  - Applying previously tested and validated sensors and instrumentation.
  - Piloting novel approaches for sediment-transport and related phenomena
  - Advances in experimental techniques related to sediment transport, including scaling laws

## The Projects



### University of Florida

Quantifying morphological changes driven by oyster reef breakwaters under different tidal and wave conditions to inform restoration strategies



### University of Washington

Sediment Transport Over the Nearshore Environment (STONE): Linking nonlinear wave effects across the shoaling and breaking zone



### University of New Hampshire

Scaling Transport in Nearshore Vegetated and Non-Vegetated Environments: Sediment, Seeds, and Stiffness



### University of North Carolina at Wilmington

Breaking wave-induced rapid beach profile evolution in the inner surf and swash zones



### University of South Alabama

Augmenting Hurricane Sentinel Towers with Chemical and Biological Sensors



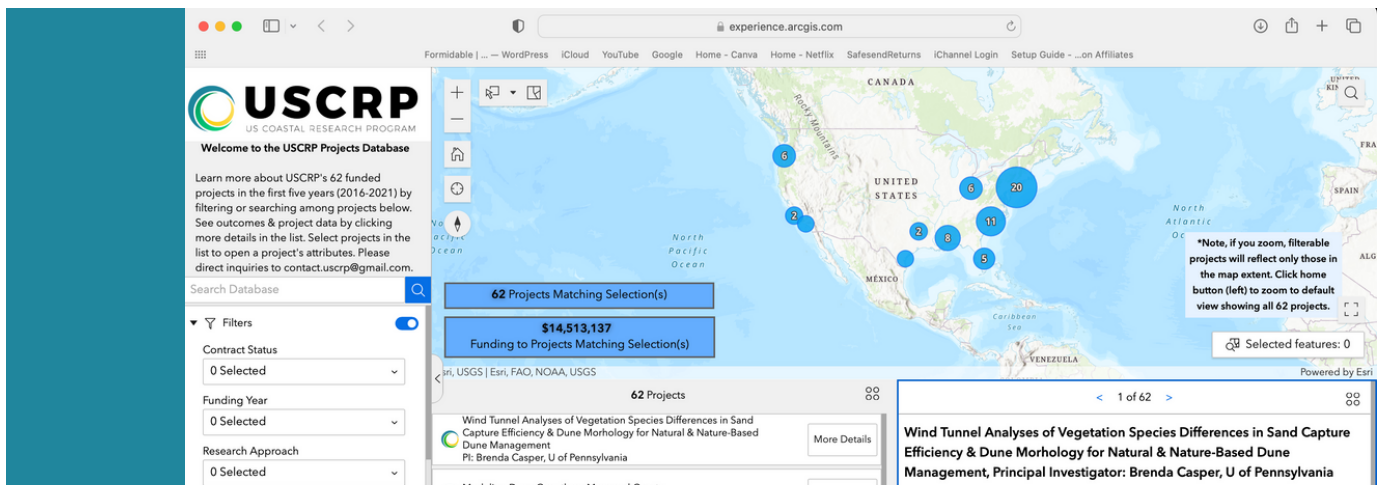
Program Manager, Jessie Straub, presents on USCRP at the American Shore and Beach Preservation Association's National Coastal Conference.

# USCRP PRODUCTS

The USCRP is committed to science translation and communication with members and the broader coastal research community about the program, member engagement, funded projects, community announcements, and more. Through member meetings, membership newsletters, the website, our social media, and special projects, USCRP regularly disseminates impacts, outcomes, and updates.

# USCRP PROJECT DATABASE

USCRP has worked to meet the needs of coastal community of practice by developing a USCRP-funded projects database to make project information more readily available. Already viewed 1000 times, this database directly supports the organizational objective of promoting science translation while also indirectly making project outcomes, information, and data more available and thus usable for fostering collaborations and supporting future research priorities.

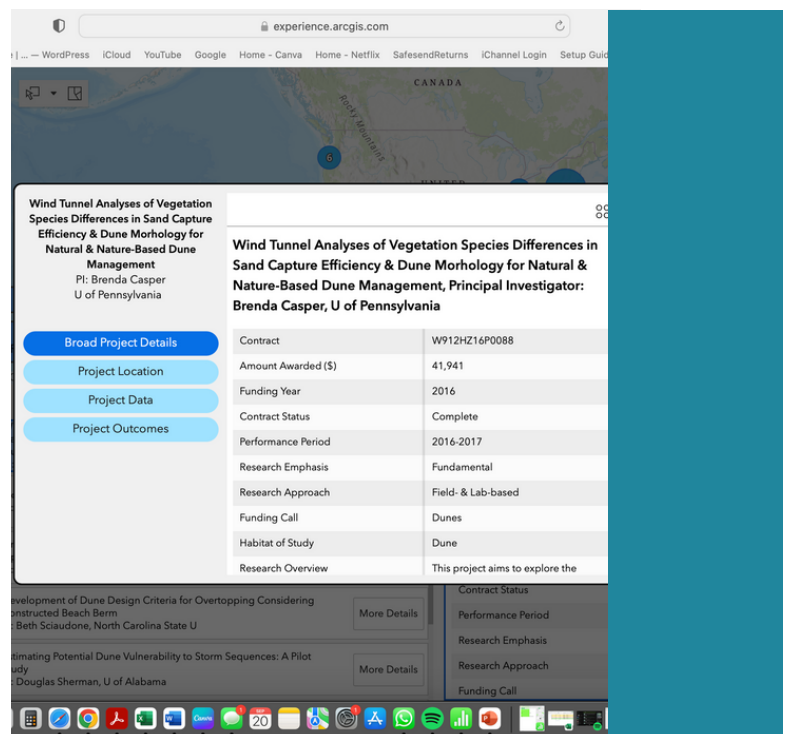


## DESIGN

The USCRP funded project database was designed with stakeholders, academics, and federal partners in mind regarding the inclusion, structure, and presentation of information in the launch of a beta user-interface.

## CAPABILITIES

The main capabilities of the current UI are to make the first 62 USCRP-funded projects searchable through various filters, and to provide information on research outcome products and data associated with them. By making project data and outcomes more accessible, past funded projects can be used to inform or support future research directions and/or management and conservation initiatives.



The more details button will highlight a projects broad project details, location(s), data, and outcomes. Click outside of the box to return to the main screen.

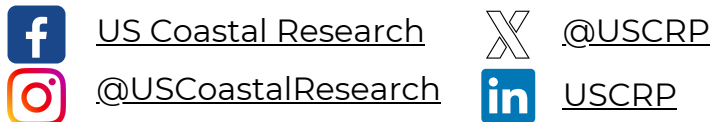
# BY THE NUMBERS

The objectives of the USCRP are to identify research priorities, enhance funding for academic programs to tackle coastal challenges, foster collaborations, and promote science translation and communication. The USCRP has been seeking meaningful ways to evaluate and communicate impacts and outcomes towards advancing these objectives, and in doing so, building a coastal community of practice to address societal needs along our coast.

The numbers in the first five years of funding surrounding our federal stakeholders, non-federal stakeholders, students, and academics showcase the impactful national coastal effort the USCRP is fostering and leading. Thus staff created several products showcasing USCRP's impact "by the numbers".

## SOCIAL MEDIA CAMPAIGN

Have you been following our campaign as we showcase one number every two weeks on our socials? Follow along now:



## FLYERS

Staff produced flyers highlighting quantitative and qualitative metrics related to the first 62 projects; academia, federal partners, stakeholders, and students. Check them out on the next pages →

## BLOGS

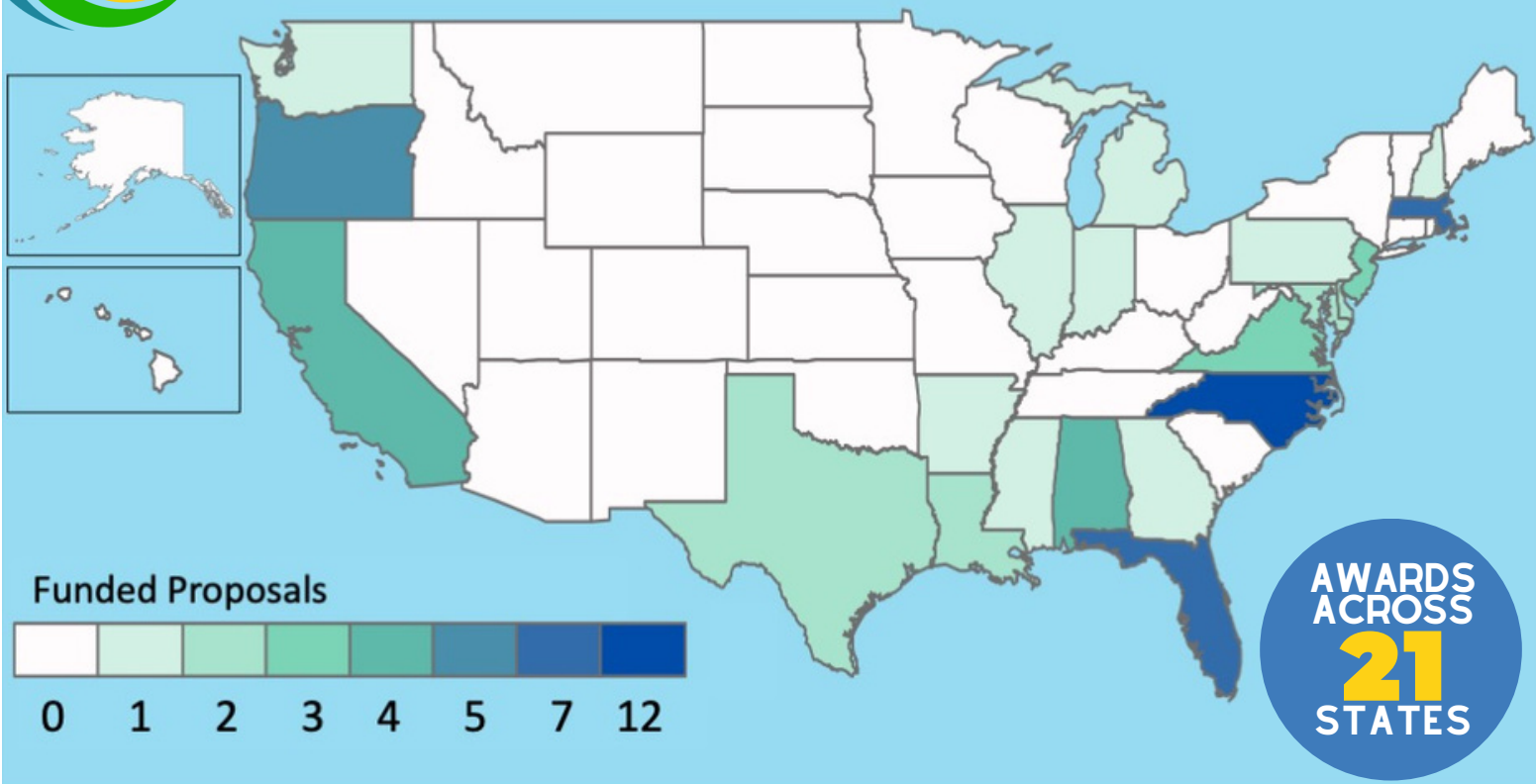
Looking for more insight to the numbers presented on social media? Staff wrote 4 blog posts diving into the nuances of the programs impacts over the first 5 years of funding. Read more on [OUR WEBSITE](#).



USCRP will continue exploring and updating "USCRP By the Numbers" as additional information is gathered, and as a way to demonstrate the vast impacts of the program across different coastal locales, industry sectors, and agencies working together to protect and understand our coasts.



# USCRP BY THE NUMBERS 2016-2021



**THE FIRST FIVE YEARS**  
**442**  
 research proposals received totaling **\$111 million** requested for coastal research

The U.S. Coastal Research Program (USCRP) is a collaboration between Federal agencies, academics, & stakeholders which aims to identify research priorities, enhance funding for academic programs, foster collaborations, & promote science translation. The USCRP leads a national effort to coordinate federal activities & align resources to support academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation’s workforce.

The program represents a national community of researchers & practitioners with shared passions working together to identify priorities & leverage resources supporting research-to-user objectives. By facilitating partnerships, multi-agency collaborations, & leveraging limited resources, the USCRP increases coastal research impacts & applications, building a community of practice to address societal needs along the coast.

## OUR PARTNERS





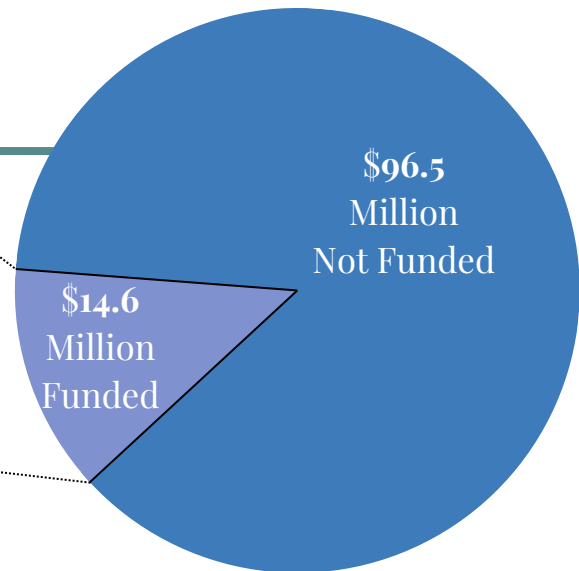


# THE FIRST FIVE YEARS OF FUNDING 2016-2021

## FUNDING

5

- Funding call opportunities
- Dunes on Developed Coasts
  - Storm Processes & Impacts
  - Research in Support of Federal Stakeholder Priorities
  - Federal Science Priorities in Long-Term Processes & Estuarine Ecosystems
  - Human & Ecosystem Health in the Coastal Zone



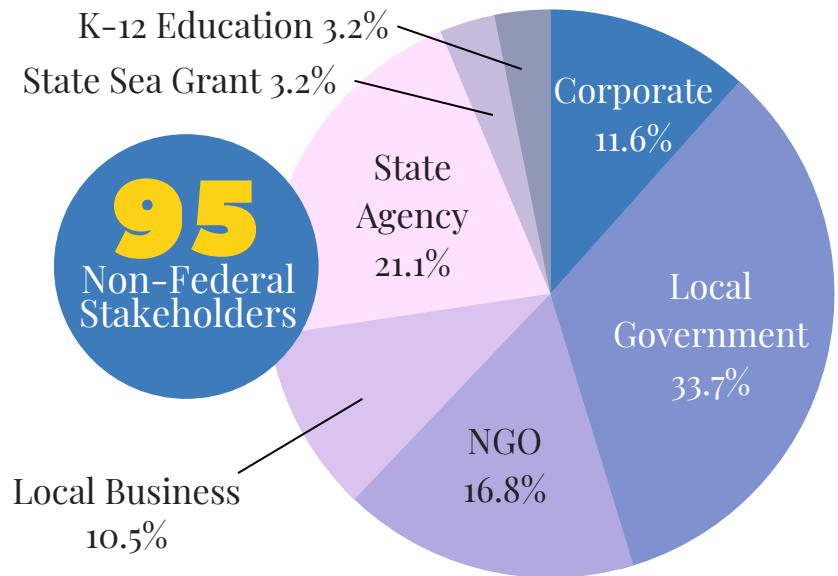
## FEDERAL AGENCIES & STAKEHOLDERS

19

### Federal Agencies Engaged

- BOEM
- DOE
- DOS
- DOT
- EPA
- FEMA
- NASA
- NAVY
- NOAA
- NPS
- NRC
- NRL
- ONR
- USACE
- USGS
- NSF
- Smithsonian
- USDA
- USFWS

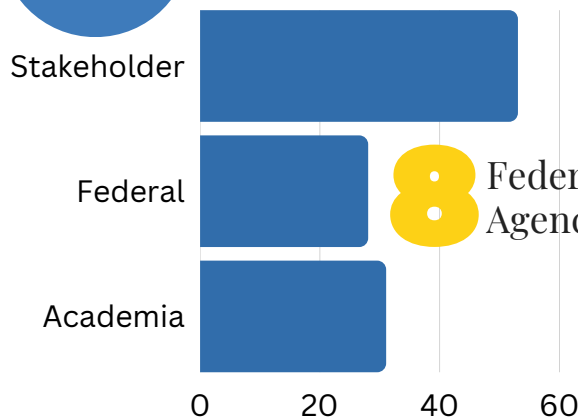
95 Non-Federal Stakeholders



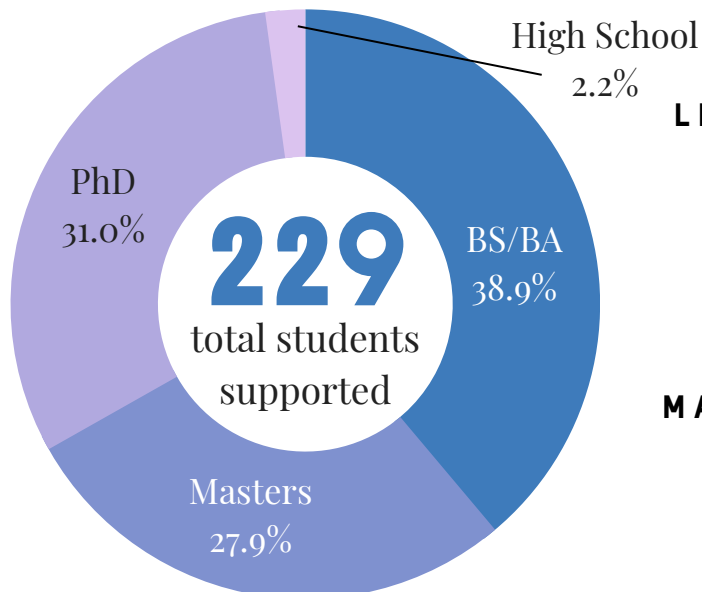
## STUDENTS

114

- Matriculated to date:
- Where are they now?



8 Federal Agencies



229 total students supported

LEARN MORE



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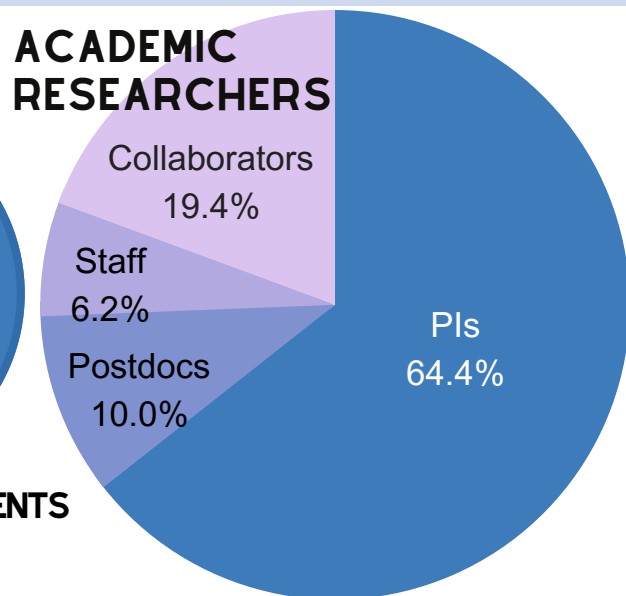
# USCRP ACADEMIA BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP enhances funding opportunities for academic research and fosters collaborative opportunities.

In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders.



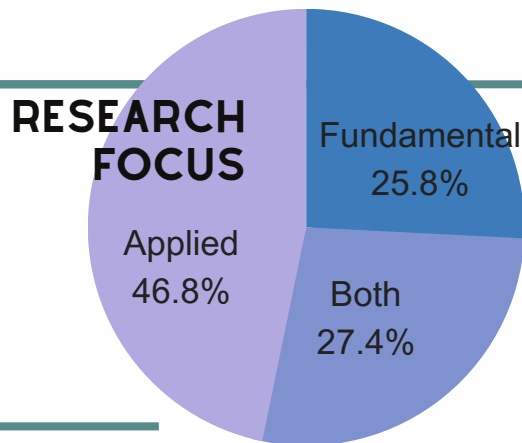
**GRADUATE STUDENTS**  
64 Master's  
71 PhD



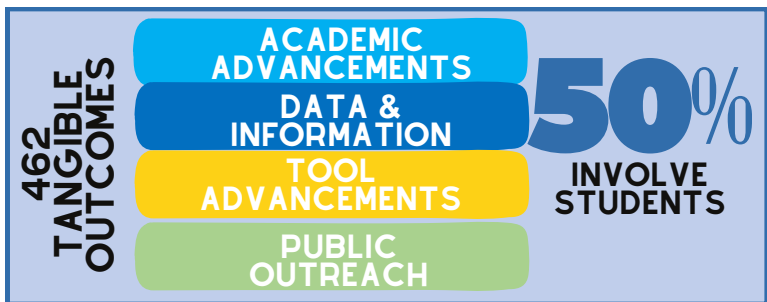
\*6 collaborators from international institutions

## DISCIPLINARY DIVERSITY

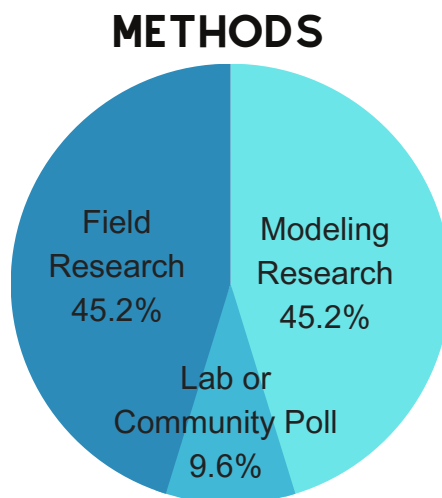
- Biology 14.1%
- Chemistry 1.3%
- Engineering 34.0%
- Environmental Studies 1.9%
- Geography 3.8%
- Geosciences 12.2%
- Mathematics 2.6%
- Oceanography 16.7%
- Physical Sciences 6.4%
- Policy & Planning 5.8%
- Social Sciences 1.3%



## TRANSLATING SCIENCE



- 229 technical presentations
  - 106 international & 119 national meetings
- 38 theses & dissertations across 21 universities
- 73 research articles (42 journals, 8 state of science reviews)



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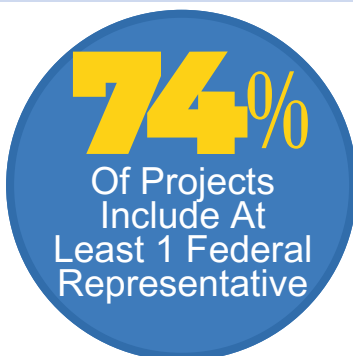




# USCRP FEDERAL PARTNERS BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP works to identify societally relevant research priorities and fundamental knowledge gaps in support of federal priorities.

In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders.



## RESEARCH FOCUS

Applied 46.8%  
Fundamental 25.8%  
Both 27.4%

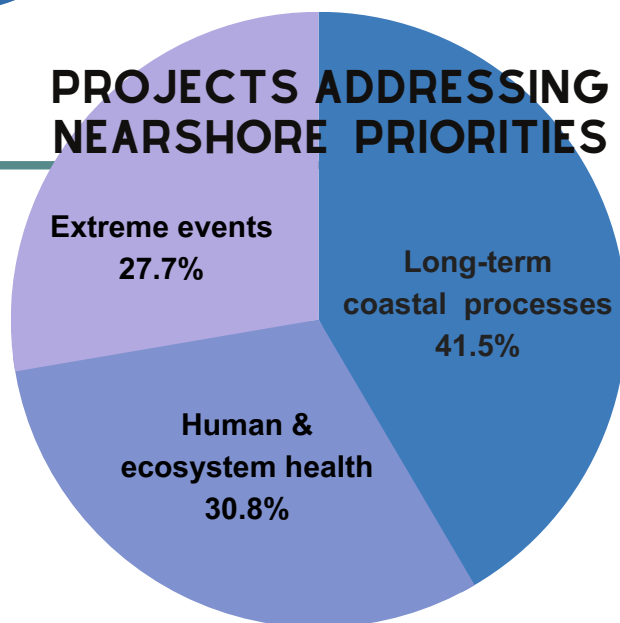
- Average of 2 unique representatives per project
- Range of 1-4 agencies involved per research team

## SUPPORTING FEDERAL PRIORITIES

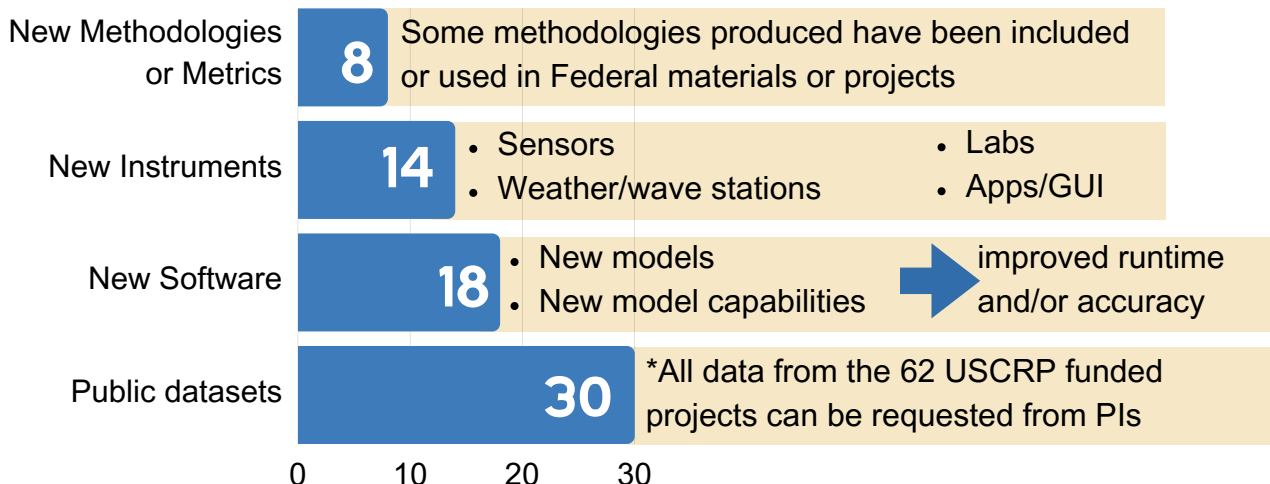


- BOEM
- DOE
- DOS
- DOT
- EPA
- FEMA
- NASA
- NAVY
- NOAA
- NPS
- NRC
- NRL
- ONR
- USACE
- USGS
- NSF
- Smithsonian
- USDA
- USFWS

## PROJECTS ADDRESSING NEARSHORE PRIORITIES



## RESEARCH GENERATING USABLE PRODUCTS



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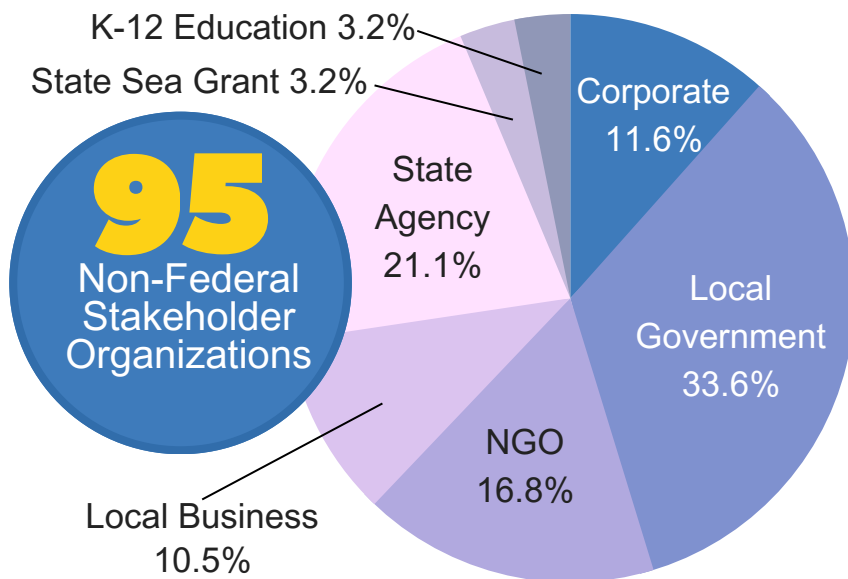
# USCRP STAKEHOLDERS BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP translates fundamental science to outcomes that benefit users.

In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders.

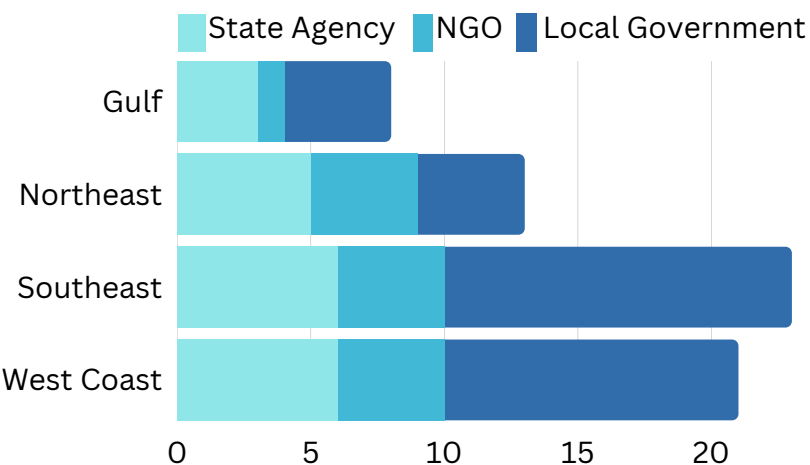


Average 3 instances of unique organization involvement per project across the 38 projects with stakeholder involvement



- **Gulf Coast** (13)
    - Alabama
    - Louisiana
    - Mississippi
    - Texas
  - **Great Lakes** (2)
    - Minnesota
    - Pennsylvania
  - **Northeast** (22)
    - Delaware
    - Maryland
    - New Jersey
  - **Southeast** (50)
    - Florida
    - North Carolina
    - South Carolina
  - **West Coast** (28)
    - California
    - Oregon
  - **Other/Inland** (4)
    - Tennessee
    - International
- (#) each time a unique stakeholder was engaged in a research team

## ORGANIZATIONS BY REGION



## STAKEHOLDER SUPPORT

Stakeholders have provided services, staff time, funding, and more to further coastal research. In return they have received:

- accurate dune construction guidelines
- decision support
- improved resilience
- and more (see the impacts & outcomes flyer)

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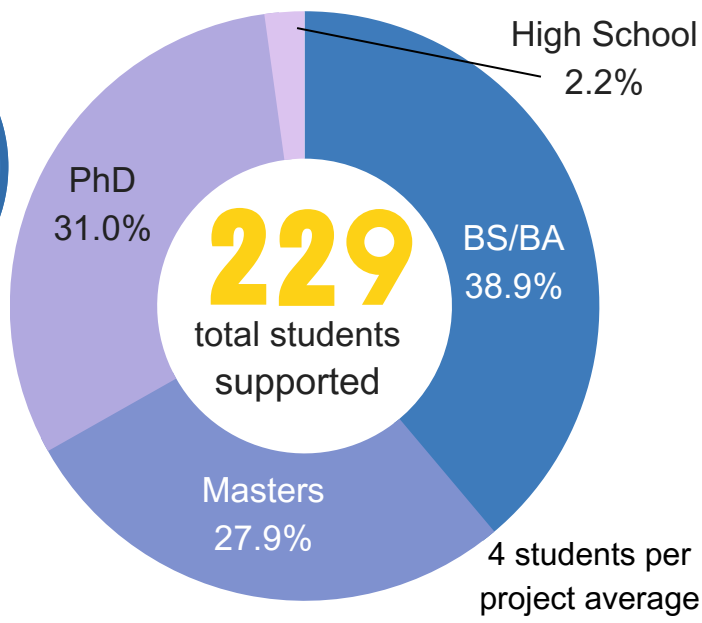
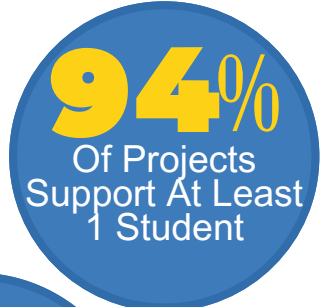
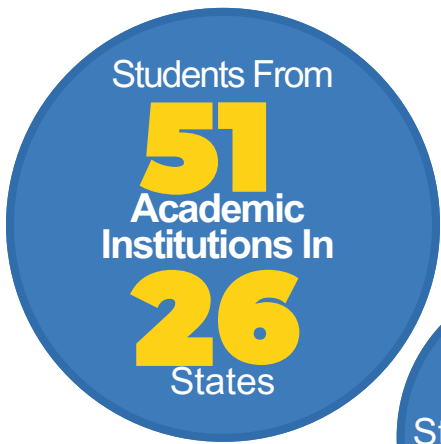




# USCRP STUDENTS BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP enhances funding opportunities for student programs building a skilled workforce.

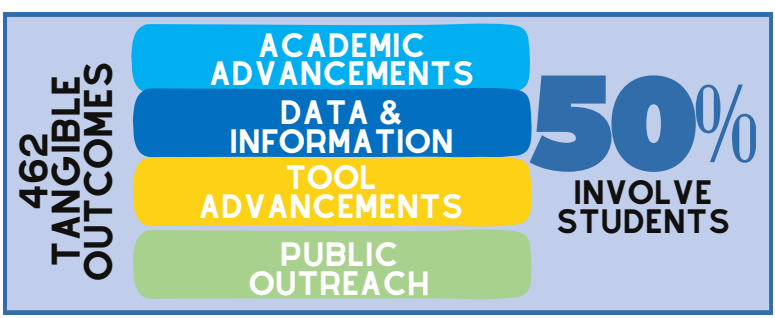
In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders.



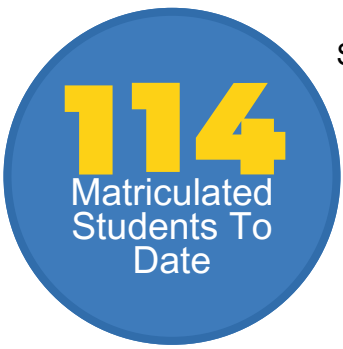
## DISCIPLINARY DIVERSITY

### RESEARCH DISCIPLINES

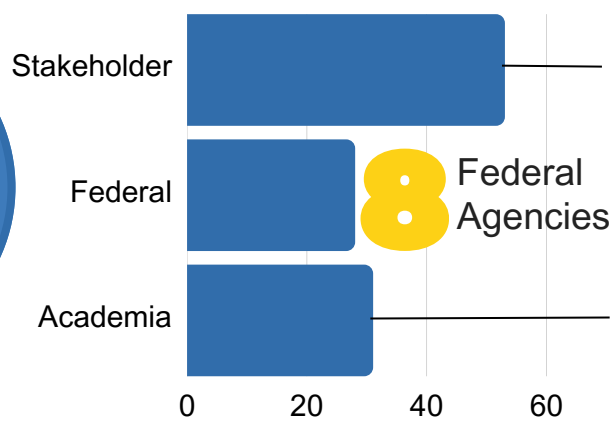
- Engineering 39.6%
- Physical Sciences 32.9%
- Biology & Life Sciences 21.7%
- Policy, Planning, & Social Sciences 3.4%
- Environmental Studies & Conservation 2.4%



## BUILDING OUR COASTAL WORKFORCE



### WHERE ARE THEY NOW?



- 77% Corporate
- 23% NGO, State Agency Local Gov or Business
- 51.5% New Degree
- 6.5% Tenure-track
- 32.3% Post-Doc
- 9.7% Researcher

### LEARN MORE



### JOIN OUR MAILING LIST





# USCRP PROGRAM IMPACT BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP explores fundamental, as well as applied, science and engineering questions.

In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders. USCRP defines outcomes as tangible products that can be found & used as resources within four categories: academic advancements, data & information, tool advancements, and public outreach.

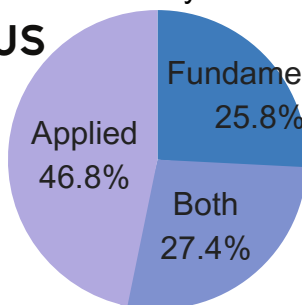
## SUPPORTING COASTAL NEEDS



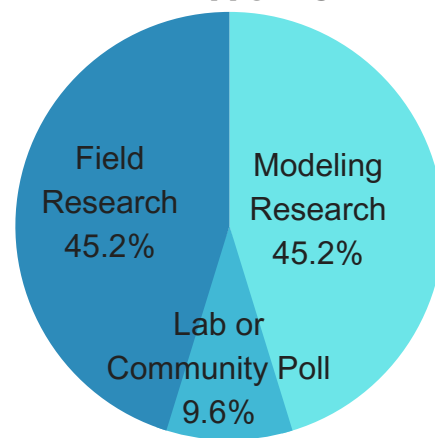
### NEARSHORE RESEARCH

- Extreme events
- Long-term coastal processes
- Human & ecosystem health

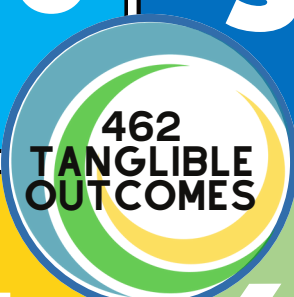
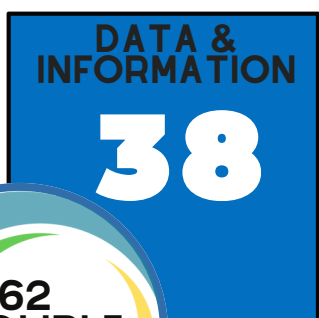
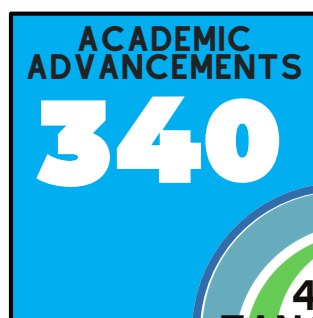
### FOCUS



### METHODS

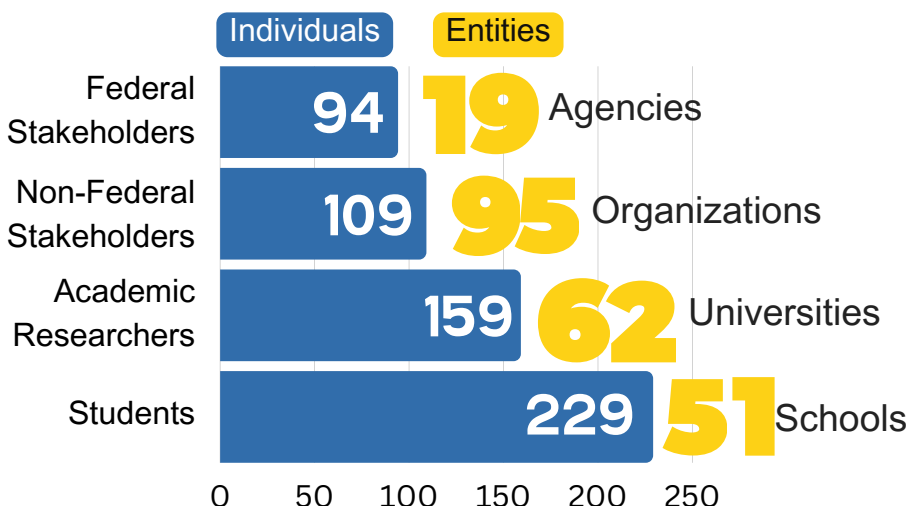


## PROJECT PRODUCTS



## FOSTERING COLLABORATION

### PROJECT TEAMS INVOLVEMENT



- Researchers & students across 75 unique academic institutions spanning 29 states

USCRP OUTCOMES



LEARN MORE



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# USCRP OUTCOMES BY THE NUMBERS 2016-2021

The US Coastal Research Program (USCRP) leads a national effort to coordinate federal coastal activities & align resources to support coastal-related academic studies addressing the growing needs of coastal communities, ultimately, fostering the nation's coastal workforce. USCRP provides scientific knowledge and useful products for coastal communities and the nation.

In the first five years of funding (2016-2021) **USCRP funded 62 projects** across five funding calls. Research teams are comprised of academic researchers, students, Federal partners, & non-federal stakeholders. USCRP defines outcomes as tangible products that can be found & used as resources within four categories: academic advancements, data & information, tool advancements, and public outreach.

## 462 TANGIBLE OUTCOMES

### ACADEMIC ADVANCEMENTS: 340

PEER-REVIEWED PUBLICATIONS

111

- 38 theses & dissertations across 21 universities
- 73 research articles across 42 journals
  - 8 state of science reviews

TECHNICAL PRESENTATIONS

229

- 4 Government briefings
- 106 international meetings across 19 venues
- 119 national meetings across 49 venues

### DATA & INFORMATION: 38

PUBLIC DATASETS

30

- \*All data from USCRP funded projects can be requested from PIs. 30 datasets are already published online such that they need not be requested directly from the PI

REPORTS & REGULATORY

8

- 4 technical reports
- 2 community reports
- 2 regulatory documents
  - 1 Federal

### TOOL ADVANCEMENTS: 41

SOFTWARE

18

- 18 new models or new model capabilities developed
  - Many model improvements in runtime & accuracy

INNOVATION-TECH & OTHER

23

- 8 new methods or metrics
- 2 Apps/GUIs
- 13 new instruments
  - 8 Sensors
  - 4 climatic stations
  - 1 new lab

### PUBLIC OUTREACH: 43

PUBLIC ENGAGEMENT

32

- 8 workshops, focus groups, or briefings
- 7 dedicated websites
- 17 research highlights or newsletter coverage

EXTERNAL PUBLICITY

11

- 6 news or online articles
- 2 radio broadcasts
- 3 tv coverages



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50% OF ALL OUTCOMES INVOLVE STUDENTS

USCRP OUTCOMES

# DUNEX

the During Nearshore Event Experiment

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The U.S. Coastal Research Program sponsored a community-led storm processes field experiment known as DUNEX (During Nearshore Event Experiment) in 2019.

## GOALS

The overarching goal of DUNEX was to collaboratively gather multi-disciplinary information to improve understanding of the interactions of coastal water levels, waves, and flows, beach and dune evolution, soil behavior, vegetation, and groundwater during major coastal storms that affect infrastructure, habitats, and communities.



Federal Representatives, DUNEX researchers, students, and stakeholders gather for DUNEX VIP Day to learn more about coastal research in figure 22 from the report.

## TECHNICAL REPORT

The 2023 technical publication [A Large-Scale Community Storm Processes Field Experiment: The During Nearshore Event Experiment \(DUNEX\) Overview Reference Report](#), “focuses on the planning and preparation required to conduct a large-scale field experiment, the collaboration amongst researchers, and lessons learned” (Cialone et al., 2023). The report breaks down the experiment background, planning and coordination, DUNEX 2019 pilot study, 2020 activities during the pandemic-induced stand-down year, the 2021 main field experiment, and lessons learned.



# CONTENT ROUND UP

**Most Popular**

## Introduction to Living Shorelines Academy

Thursday, November 2nd  
2-5pm

**Best-All Around**

**Most USCRP Spirit**

**Most Unforgettable**

**Most Likely to be Insta Famous**

**CONGRATULATIONS To the 2023 USCRP Funded Projects**

- Quantifying Morphological Changes Driven by Oyster Reef Breakwaters Under Different Tidal and Wave Conditions to Inform Restoration Strategies
- Alberto Canestrelli, University of Florida
- Sediment Transport Over the Nearshore Environment (STONE): Linking Nonlinear-Wave Effects Across the Shoaling and Breaking Zone
- Morteza Derakhsh, University of Washington
- Scaling Transport in Nearshore Vegetated and Non-Vegetated Environments: Sediment, Seeds, and Stiffness
- Diane Foster, University of New Hampshire
- Breaking Wave-Induced Rapid Beach Profile Evolution in the Inner Surf and Swash Zones
- Ryan Mierza, University of North Carolina Wilmington
- Augmenting Hurricane Sentinel Towers with Chemical and Biological Sensors
- Bret Webb, University of South Alabama

LEARN MORE AT [USCOASTALRESEARCH.ORG](https://USCOASTALRESEARCH.ORG)

**Most Likely to Save the Planet**

**Facebook**

**Instagram**

**Twitter**



From Left to Right, Dr. Tuba Ozkan-Haller, General Daniel Hibner (SAD), Dr. Ed Link, Dr. Nicole Elko (Co-Executive Director of USCRP), and Col John Lloyd (NAD) on a site visit at the CERB Meeting in Chicago, IL.

# USCRP IN THE COMMUNITY

The coastal community of practice is active throughout the year. USCRP staff attended several coastal community events and engaged with members, researchers, students, and communities. We enjoyed the opportunity to hear about your work, share the USCRP mission more broadly, and continue to connect societal needs with opportunities for academic investigation. Here are some of the stories we told about events we attended.

# NJ MARINE EDUCATION ASSOCIATION

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Dr. Charbonneau presenting her Teach at the Beach session.

One of the ways in which the USCRP supports stakeholders is by engaging with local organizations, such as the New Jersey Marine Education Association (NJMEA). USCRP's ORISE Fellow, Dr. Bianca Charbonneau, represented USCRP at this year's Teach at the Beach, NJMEA's annual workshop. Charbonneau was selected to share her coastal dune ecological knowledge in a talk entitled, 'Coastal Dune Plants: Knowledge Beyond Just Keep off the Dunes.' Her talk covered general dune ecology, specific plant species, reasons to keep off the dunes, and resources, such as those associated with USCRP, for learning more about coastal topics in education, outreach, and management.

[\*read more . . .\*](#)

## PROGRAM PROJECTS AND IMPACTS SESSION

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In case you missed it, the USCRP hosted a dedicated session at the American Shore and Beach Preservation Association's (ASBPA) National Coastal Conference in October. The U.S. Coastal Research Program Projects and Impacts session highlighted the wide range of programmatic contributions the USCRP has made to the coastal community, along with presentations by graduate students supported by USCRP-funded research projects.

[\*read more . . .\*](#)

Left: EJ Rainville  
Center: Jyothirmayi Palaparathi Right: Erfan Amini



# CERB 2023

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In March, Jessie Straub presented on USCRP at the Execute Session of the Board on Coastal Engineering Research (BCER or CERB). The theme of the meeting was “Coastal R&D Needs to Address Environmental Justice and Non-Structural Solutions.” The meeting was hosted by USACE’s Chicago District and included a technical tour of Chicago Shoreline project sites. The USCRP presentation gave the BCER an update on USCRP impacts and outcomes, USCRP project examples in environmental justice and non-structural solutions, and an update on program initiatives and meaningful USCRP impacts thus far. The presentation was well received by board members who were excited to hear about all of the program successes and impacts so far.



Participants tour the Chicago shoreline.

## CELEBRATION OF COASTAL ENGINEERING

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The University of North Carolina at Wilmington (UNCW) hosted a Celebration of Coastal Engineering event attended by USCRP Staff to connect with students, tour the facility, and share USCRP programming with attendees. The Celebration started with a student job and internship fair. 60 students from their sophomore year to graduate students in multiple disciplines came to engage with nonprofit, state agency, federal agency, and private sector firms. The networking event was followed by a tour of the UNCW Coastal Engineering facility and demonstration of the wave flume.

[\*read more . . .\*](#)



Dr. Joe Long, active member of USCRP’s Academic Team, addresses guests at the celebration in front of the wave flume.



# SUMMARY

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In conclusion, 2023 was a year of continued growth for the USCRP. We are most looking forward to engaging with you at conferences, hosting you in St. Petersburg, and continuing to learn from your research. We cannot wait to see you online at our membership meetings and in-person at the 2024 Decadal Visioning Workshop.

Want to get involved, learn more, or share an event for 2024?  
Email us at [contact.uscrp@gmail.com](mailto:contact.uscrp@gmail.com)