

# U.S. Coastal Research Program

## Quarterly Bulletin

### June 2019

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For more information on the motivation and goal of the USCRP as well as current initiatives, please see the USCRP website, <https://uscoastalresearch.org/>.

#### USCRP 2019 Research Awards Update

In FY19, the USCRP is funding \$5M in academic research awards that address critical research needs in the coastal community. The USCRP invited academic researchers to submit Statements of Interest (SOIs) on the following 12 topics, which address the USCRP's research themes:

- ❖ Identify and communicate coastal impacts
- ❖ Coastal structure design and rehabilitation incorporating stochastic risk and uncertainty
- ❖ Understanding the crossroads of human and ecosystem health
- ❖ Evaluating the distribution and geotechnical properties of Outer Continental Shelf (OCS) sand resources and coupled environmental responses to dredging
- ❖ Nearshore sediment transport and sediment budgets over decadal scales
- ❖ Long-term implications of coastal restoration
- ❖ Development of a USCRP coastal data portal
- ❖ Quantifying and communicating numerical model uncertainty
- ❖ Develop community resilience guidance for recovery, mitigation, and adaptation
- ❖ Applied storm and recovery studies as part of the DURING Nearshore Event eXperiment (DUNEX)
- ❖ Coastal adaptation pathways for barrier island communities
- ❖ Quantitative model for optimizing coastal community systems performance.

In March 2019, the USCRP received 250 SOIs which were reviewed by panelists with expertise in the above-listed topics. Reviewers evaluated the capacity of the researchers to address knowledge gaps using numerical, analytical, laboratory, and/or field methods, as well as the relevance of the proposed topic to coastal communities. In May 2019, 45 of the 250 research teams were notified that their SOIs were selected to move forward to the second stage of the selection process and were asked to submit a full proposal. The full proposals were due June 7, 2019, and will be reviewed by an expert panel on scientific merit, technical feasibility, and broader impacts to society for potential final award selection. Proposals chosen in the final selection process will be awarded by 30 Sep 2019.



## DUNEX – Project Update

As storm season approaches, DUNEX planners are preparing. About a dozen teams from academic institutions and federal agencies are currently funded and gearing up to conduct experiments during this upcoming season, the “pilot” year, to develop the communications and infrastructure needed to support the research teams planning to participate in the full experiment in Fall 2020. The pilot project is also designed to help individual teams begin implementation of their experiment plans, test methods, and work through logistical scenarios. Additionally, >30 teams have indicated a desire to participate in the pilot project pending funding availability. Training opportunities are being planned to take advantage of the intellectual resources that will be focused on this experiment.

Preparation for DUNEX is organized under several teams: Logistics, Communications, Data Management, Interagency Collaboration, and Training. Each of these teams is fully engaged in helping to ensure the pilot season runs as smoothly as possible.

The **Logistics** team is tracking the dozens of logistics surveys that were submitted – MANY THANKS to ALL respondents. Currently, the biggest unknown is how many teams will participate. As mentioned previously, we have a dozen confirmed participants with potential to grow to 3 or 4 times that amount. Please contact Mr. Alex Renaud ([Alexander.D.Renaud@usace.army.mil](mailto:Alexander.D.Renaud@usace.army.mil)) to keep the Logistics team informed about your potential plans to participate! They are currently developing safety plans for daily operations at the USACE Field Research Facility (FRF) as well as coordinating with local emergency management officials in the event of storm evacuation orders. They are also working hard to add the physical infrastructure (office trailers, internet, power, water, etc.) for the research teams, to have sufficient space to gather for daily briefings and to conduct training.

The **Training** team is preparing a multi-day program consisting of about 2 1/2 days of formal classroom modules geared towards introductory level coastal engineering and 2 1/2 days of field trips and topical DUNEX “tech talks”. The team plans to continue weekly (evening) DUNEX tech talks for the entire month of October to be broadcast via webinar for all participating research teams.

The **Communications** team has established a research forum to support an open dialog among participating research teams. They have also been in contact with federal and state agencies that have jurisdiction of the lands that will, or may, be used by research teams. The Outer Banks of North Carolina, where DUNEX is operating, has numerous land owners requiring permits for permission and access to conduct experiments. These owners / agencies include the USFWS, NPS, N.C. Coastal Reserve, local towns and counties. Each team will be responsible for their own permissions, but the communication team is working to gather permitting contact information for the researchers (to possibly ease the permitting process) and to communicate to the permitting agencies the importance and value of DUNEX. They are also investigating use



of social media for internal and external communications and are beginning to engage the public affairs offices of participating agencies and academic institutions; stay tuned!

The **Interagency** coordination team is focused on informing the wide array of coastal federal scientists about DUNEX and how to become involved. They have begun outreach to state level partners such as the NC Department of Transportation. They are striving to make sure agency efforts are synergistic and collaborative to the extent possible. Several agencies have submitted logistics surveys for participation in the pilot experiment season. The Interagency team is also providing a mechanism to participate without having to field an experiment. For example, federal scientists can attend or teach a training session or be assigned to an experiment team to assist and learn from a research team.

The **Data Management** team was created to support sharing information about the experiments and the data gathered by the support teams and researchers. They are developing a web accessible experiment map to assist visualization and communication of “who is where doing what”. They hope to create a story board by mapping survey locations and deployed sensors to facilitate communication. Each research team will be able to provide abstracts of their work and links to applicable websites and blogs for their activities. The Data Management team is also crafting a plan for experiment data hosting and sharing. This plan will be vetted with research teams to encourage maximum availability and access to the diverse suite of information gathered during DUNEX.

For further information please contact Alex Renaud at [alexander.d.renaud@usace.army.mil](mailto:alexander.d.renaud@usace.army.mil).

#### A Note on the USACE Field Research Facility (FRF)



The northern Outer Banks was selected for the DUNEX project for two reasons: 1) the region is frequently impacted by hurricanes and northeasters, and 2) access to research facilities. The USACE Field Research Facility (FRF) is a coastal observatory located within the study region in Duck, NC. FRF staff can provide logistical support, field data collection, and a rich, multi-decadal dataset of physical processes and

morphology change observations to DUNEX research participants (Cialone et al. 2019).

The FRF was established as a permanent field data collection facility for nearshore observations and field experiments in 1977, after civilian members of the USACE Coastal Engineering Research Board (CERB) described the need to collect field data to improve scientific understanding of physical coastal processes (hydrodynamics and morphology) to guide coastal engineering technology.



The function of the FRF includes:

- ❖ Providing a rigid platform from land, across the dunes, beach, and surf zone out to 6-m (20-ft) water depth from which waves, currents, water levels, and bottom elevations can be measured, especially during severe storms.
- ❖ Serving as a permanent base of operations for physical and biological studies of the site, the adjacent sound and ocean region by the Corps of Engineers, other Federal agencies, universities, and private industry.
- ❖ Providing USACE with field experience and data that complements laboratory and analytical studies and a better understanding of the influence of field conditions on measurements and design practices.
- ❖ Providing a field facility for evaluating new instrumentation.

Visit the FRF website (<http://www.frf.usace.army.mil/frf.shtml>) to learn more about the FRF and the nearshore research conducted there.

References:

Cialone M., Elko N., Lillycrop J., Stockdon H., Raubenheimer B., Rosati J. (2019). During Nearshore Event Experiment (DUNEX): A Collaborative Community Field Data Collection Effort. *Proceedings of the 9<sup>th</sup> International Conference*. Paper presented at Coastal Sediments 2019, St. Pete Beach, Florida, 27-31 May 2019.

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Invited Contribution by Steve Deloach and the DUNEX Team

The Coastal Sediments 2019 Conference was held May 27-May 31 in St. Pete Beach, Florida, and was attended by nearly 300 coastal scientists and engineers from academia, industry, Federal agencies, and non-governmental organizations.

This conference provided an important opportunity to encourage coastal scientists and engineers to become involved in the USCRP to help further build a research community to support coastal stakeholders. Dr. Hilary Stockdon (USGS, USCRP Virtual Program Office [VPO]) moderated a special session on the USCRP on Wednesday, May 28, and described the background and goals of the USCRP in her opening talk. Ms. Mary Cialone (USACE, USCRP VPO) presented on the DURING Nearshore Event eXperiment (DUNEX), a multi-phase, collaborative community field data collection effort, which is supported and promoted by the USCRP. Drs. David Young and Spicer Bak (USACE) both presented on the Coastal Model Test Bed, which is another community initiative project that automates evaluation of coastal numerical models using data collected at the USACE Coastal and Hydraulics Laboratory (CHL) Field Research Facility (FRF) for targeted model development. The final talk of the session was by Dr. Ayse Karanci (University of Florida), whose PhD research on Unmanned Aerial Vehicle Data Integration for Coastal Modeling was funded by a USCRP research award.

**USCRP  
Activities at  
Coastal  
Sediments 2019**



Dr. Julie Rosati (USACE, USCRP VPO) presented a poster on how the USCRP fosters academic research, highlighting past USCRP-supported workshops (Dune management challenges on developed coasts, 2015; Storm processes and impacts, 2018). These workshops brought together a diverse group of coastal stakeholders to identify societally-relevant coastal research needs, and resulted in the USCRP awarding >\$1M in competitive academic awards.



Julie Rosati (right) and Emily Russ (left) presenting poster at Coastal Sediments 2019. Photo Credit: Mary Cialone

Because these thematic workshops are designed to bring together Federal agency representatives, researchers, and coastal practitioners to address coastal management challenges, conference attendees were invited to prioritize the following topics: Coastal engineering properties of natural and nature-based features (NNBF); tools to plan for long-term adaptation; and technologies to estimate compound coastal flooding (rain, river, storm surge). Alternatively, attendees could suggest their own. The input received will be considered when determining the theme for the next USCRP-supported workshop.

The USCRP Virtual Program Office also helped organize and facilitate a DUNEX forum at the conference to give researchers interested in participating in the experiment an opportunity to share ideas and discuss potential collaborations.

Abstracts for the 6th Young Coastal Scientists and Engineers Conference - Americas (YCSEC-A) 2019 (<http://ycseca.wordpress.com/>) are due June 30. This year the meeting will be held August 8-10, 2019 in Corvallis, Oregon and will be hosted by Oregon State University (OSU).

The Young Coastal Scientists and Engineers Conference - Americas is aimed at young scientists and engineers focused on any aspect of physical coastal science or engineering. Graduate and undergraduate students, post-doctoral researchers and young professionals in industry or government positions are encouraged to attend. The conference promotes multi- and interdisciplinary interaction to assist in developing an integrated research community and is modeled after the UK YCSEC.

The program will include keynote speakers from academia, and industry, oral presentations by the conference participants, professional development sessions, exhibitors, and social networking events.

## 6<sup>th</sup> Annual Young Coastal Scientists and Engineers Conference (YCSEC)



**Awards:**

The American Shore and Beach Preservation Association (ASBPA) will be giving each participating student a free student membership to ASBPA for the remainder for 2019 and all of 2020 (with e-access to Shore & Beach).

ASBPA will also sponsor an award for the best student presentation with an automatic presentation spot and complimentary registration to ASBPA 2019 National Coastal Conference, October 22-25 in Myrtle Beach, SC.

**Key Dates:**

8 April 2019: Call for abstracts

1 May 2019: Registration open

30 June 2019: Abstracts Due

30 July 2019: Registration Closes

8-10 August 2019 (Thursday-Saturday): YCSEC-A @ OSU

**Keynote Speakers:**

Dr. Julie Rosati – US Army Corps of Engineers

Dr. Tuba Ozkan-Haller – Oregon State University

Dr. Craig Jones – Marine Sciences and Engineering, Integral Consulting

For more information about the 2019 conference, including instructions for submitting an abstract, presentation format and how to register, please

visit <http://ycseca.wordpress.com/conference/>

Contact <https://ycseca.wordpress.com/contact/> with questions.

**Announcements  
&  
Upcoming  
Events**

**Coastal Engineering Research Board**, August 13-15, 2019.

Detroit, Michigan

**ASBPA 2019 National Coastal Conference**, “Where Coasts and Rivers Meet,” October 22-25, 2019

Myrtle Beach, South Carolina

<http://asbpa.org/conferences/past-meetings/>

**Coastal and Estuarine Research Federation (CERF) 25<sup>th</sup> Biennial conference**,

“Responsive | Relevant | Ready,” November 3-7, 2019

Mobile, Alabama

<https://www.cerf.science/cerf-2019>

**2019 American Geophysical Union (AGU) Fall Meeting**, December 9-13, 2019

San Francisco, California

<https://events.jspargo.com/AGU19/Public/enter.aspx>



**Ocean Sciences Meeting (OSM) 2020**, February 16-21, 2020  
San Diego, California  
<https://www2.agu.org/ocean-sciences-meeting/>

**37<sup>th</sup> International Conference on Coastal Engineering (ICCE) 2020**, September 13-18, 2020  
Sydney, Australia  
<http://icce2020.com/>

### For More Information

If you are a member of the USCRP and interested in contributing to the **September Quarterly Bulletin**, please contact Emily Russ ([Emily.R.Russ@usace.army.mil](mailto:Emily.R.Russ@usace.army.mil)) by August 1, 2019 to be considered for inclusion.

USCRP website: <https://uscoastalresearch.org/>  
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